United Nations
Economic Commission for Europe

Food and Agriculture Organization
of the United Nations

ECE/TIM/BULL/48/3

Timber Bulletin - Volume XLVIII (1995), No. 3

FOREST PRODUCTS ANNUAL MARKET REVIEW

1994-1995

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Timber Section,
Geneva, Switzerland

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UNITED NATIONS
New York and Geneva, 1995

NOTE

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ABSTRACT

The *Forest Products Annual Market Review: 1994-1995* provides general and statistical information on forest products markets in the UN-ECE region of Europe, North America and the former USSR. The *Review* begins with a general overview of the forest products markets in the region. A description of the economic situation in the region is then followed by a discussion of developments in four sectors: roundwood, sawnwood, wood-based panels and paper and paperboard, woodpulp and pulpwood. For each sector, production, consumption and trade are considered and relevant material on specific markets is included. Tables included with the text present detailed information and annex tables contain further reference material.

ECE/TIM/BULL/48/3

UNITED NATIONS PUBLICATION

ISSN 0259-4323

FOREST PRODUCTS ANNUAL MARKET REVIEW, 1994-1995

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Preface

The *Forest Products Annual Market Review* provides general and statistical information on forest products markets in the UN-ECE region, including Europe, the former USSR and North America, for the period beginning 1994 to mid-1995. It is intended to serve as a background document for the annual market discussion for the ECE Timber Committee session, which will be held on 14 November 1995. Furthermore, it provides readers with comprehensive data on recent developments in the forest and forest product sector in the ECE region.

The *Review* begins with an overview of the forest products markets, followed by a general appraisal of economic conditions which have directly or indirectly influenced forest products markets in the ECE region. In-depth description is given of sectoral developments covering roundwood, sawnwood, wood-based panels, and pulpwood, pulp and paper. Production, consumption and trade are considered and additional material on specific markets is included. While most tables will be found with their descriptive text, additional tables found in the annex present information on apparent consumption by product and country as well as price information.

This *Review* was compiled using data from ECE-region countries responding to FAO/ECE questionnaires and other data available until the end of June 1995. The authors express their appreciation to contributing countries which included all major ECE-region producers and traders, plus an increasing number of countries in transition to market economies, with a net response rate better than the past five years. In light of the problems with reporting intra-European Union trade statistics, estimations of trade provided by the respondents enabled a timely estimation of the 1994 European market. Supplementary data were taken from specialized journals, industry associations and other sources where official data were lacking. When no data were available, the previous year's figure is used to calculate the regional total.

The *Review* will be complemented by the *Timber Bulletin* issue No. 6, *Forest Products Markets in 1995 and Prospects for 1996*, which will contain the results of the Timber Committee's market discussion. All statistics collected in the questionnaire are presented systematically in issue No. 2, *Forest Products Statistics, 1990-1994*. The issues of the *Timber Bulletin* for 1995 (Volume XLVIII) are:

1. Forest Products Prices, 1990-1994
2. Forest Products Statistics, 1990-1994
3. Forest Products Annual Market Review, 1994-1995
4. Forest Fire Statistics, 1992-1994
5. Forest Products Trade Flow Data, 1990-1994
6. Forest Products Markets in 1995 and Prospects for 1996.

The authors would like to draw your attention to the new series of the secretariat which are listed in the back of this publication:

UN-ECE/FAO Timber and Forest Study Papers (formerly ECE/TIM publications),
UN-ECE/FAO Timber and Forest Discussion Papers,
UN-ECE/FAO Timber and Forest Seminar and Workshop Proceedings,
UN-ECE/FAO Timber and Forest Information Series.

The *Review* is published on the sole responsibility of the secretariat. This manuscript was completed on 28 July 1995. More information on activities of the Timber Committee may be obtained by writing to:

Timber Section
UN-ECE Trade Division
Palais des Nations
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Explanatory notes

"Apparent consumption" is calculated by adding a country's production to imports and subtracting exports. When data are available, the apparent consumption volume is adjusted for changes in the level of stocks.

"Net trade" is calculated as the balance of exports and imports and is shown as "+" for net exports, when exports exceed imports and is shown as "-" for net imports, when imports exceed exports. Trade data for EU countries include intra-EU trade, which is often estimated by the countries.

Insufficient data were received from all of the countries of the former Yugoslavia and the former USSR to publish complete information for these country groupings. The term "former USSR" is used in the tables for brevity when referring to the Commonwealth of Independent States (CIS) plus Estonia, Latvia and Lithuania. The term "central and eastern Europe", used exclusively for presentational convenience, includes Albania, Bulgaria, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic and the former Yugoslavia. The countries of the former USSR and other countries of central and eastern Europe are referred to collectively as "countries in transition to market economies". From 1996 onwards, no country groupings will appear. Production statistics for France are preliminary and thus subject to future confirmation as are the apparent consumptions and European totals which use these production figures.

The term "coniferous wood" is used synonymously with "softwood" throughout the *Annual Market Review*. "Non-coniferous" is used synonymously for terms "hardwood" or "broadleaved" wood. In discussions of North American markets the term "lumber" may be used for "sawnwood".

Symbols and abbreviations used

-	nil or negligible
...	not available
*	secretariat estimate or unofficial figure
$	United States dollar unless otherwise specified
£	United Kingdom's pound sterling
c.i.f.	customs + insurance + freight included
CIS	Commonwealth of Independent States
CMEA	Council for Mutual Economic Assistance
EU	European Union (currently 15 States)
f.a.s.	free alongside ship
GSP	Generalized System of Preferences
GDP	gross domestic product
IMF	International Monetary Fund
m^3	cubic metre (solid volume of roundwood or processed product)
m^3EQ	cubic metres equivalent volume of wood in the rough
m.t.	metric ton
MBF	thousand board feet (2.4 m^3 for sawnwood)
NMP	net material product
PNG	Papau New Guinea
PNW	Pacific Northwest (of the United States)
PPI	Producer Price Index
Prelim.	Preliminary
Q	Quarter

Chapter I

OVERVIEW OF FOREST PRODUCTS MARKETS

In 1994 forest products markets in *Europe* turned strongly positive after falling for four consecutive years from 1990 through 1993. Overall the apparent consumption of sawnwood, wood-based panels, and paper and paperboard increased by 5.3% over 1993 (table 1). European production of coniferous sawnwood achieved its highest level in three years, close to the 1990 level. Several countries produced at record levels, including the biggest producers, while many others produced at levels above the recent past. Like sawmills, pulp, paper and paperboard companies benefited from rising sales prices and rising demand: many forest products companies overcame deficits from the recent recession. Wood-based panels also benefited from strength in construction and associated demand for furniture and fixtures, and consumption of all types of panels increased by 3.0% in 1994.

North American forest products markets also improved in 1994 over 1993 revised results, which were equal to 1992 totals. Increasing fastest at 5.3%, wood-based panels supplied the growing construction and furniture markets. OSB (oriented strand board) consumption escalated as new manufacturing capacity came on stream to meet the construction demand. Consumption of MDF (medium density fibreboard) also grew as many new applications were developed. United States plywood consumption, which had been shrinking, in part, since old growth, large diameter peeler log supplies in the Pacific Northwest became constricted to preserve spotted owl habitat, expanded in 1994 as technology and production allowed use of alternative, smaller-diameter logs for plywood manufacture. Second in growth was paper and paperboard consumption which responded to the increase in business activity. Finally, North American sawnwood consumption increased 1.3%, or almost 2 million m^3, to meet the accelerated United States construction demand, especially for private housing.

In *Russia*, the domestic apparent consumption of forest products fell by over one-third (34.5%). Domestic demand remained weak and the former CMEA trade links have not yet been replaced. The continued fall was the result of persistent disruptions of production and trade during the transition process. In the Baltic states the situation is more positive as new trade patterns are established for coniferous sawnwood exports and production increases to meet the demand, sometimes based on raw material imported from Russia.

However, if intra-CIS trade is excluded, exports of forest products from the Russian Federation to other destinations increased from 1993 to 1994 for industrial roundwood, sawnwood, plywood, pulp and paper and paperboard. Otherwise as indicated in the tables in this publication, as CIS trade continues to shrink, the result on Russian export statistics is a decline in 1994 volumes. For example, the *Review's* tables show a 6.1% decrease, from 6.6 to 6.2 million m^3 in sawnwood (coniferous plus non-coniferous) exports from 1993 to 1994; but if the decrease due to the falling intra-CIS volumes is eliminated, sawnwood exports rose by 17.4%, from 4.6 to 5.4 million m^3.

As of 1 January 1995 the European Union expanded to 15 members with the addition of Austria, Finland and Sweden. The effect was to increase, by about 75%, the European Union's forest resource area (from 73 to 129 million hectares).

Capacity utilization rates were high in 1994 in western Europe and North America in many forest products sectors including pulp and paper, sawnwood and some panel products. After the last recession and its negative effects on payback on plant and equipment investments, the forest products industry was cautious about making large capital expenditures to increase capacity. As demand weakens and prices fall for sawnwood in mid-1995, this prudence seems justified. However this was not universal and some sectors, especially engineered wood products, MDF and OSB are forecast to increase capacity substantially in the next few years.

Table 1
Apparent consumption of sawnwood, wood-based panels and paper and paperboard in Europe, the former USSR and North America 1991 to 1994

	Million units	Volume				Change 1993 to 1994	
		1991	1992	1993	1994 (prelim.)	Volume	Percent
							(%)
EUROPE							
Sawnwood	m3	94.83	90.78	87.78	95.08	7.30	8.3
Wood-based panels	m3	40.29	39.33	39.17	40.33	1.16	3.0
Paper and paperboard	m.t.	66.27	67.09	68.56	71.38	2.82	4.1
Total	m3 EQ a/	445.95	440.83	440.65	464.05	23.40	5.3
Change on previous year							
- Volume			-5.12	-0.18			
- Percent			-1.1	-			
former USSR							
Sawnwood b/	m3	74.70	49.74	36.67	23.85	-12.82	-35.0
Wood-based panels c/	m3	10.78	8.28	5.95	4.08	-1.87	-31.4
Paper and paperboard	m.t.	9.23	5.96	3.39	2.26	-1.13	-33.3
Total	m3 EQ a/	172.26	115.78	81.53	53.44	-28.09	-34.5
Change on previous year							
- Volume			-56.48	-34.25			
- Percent			-32.8	-29.6			
NORTH AMERICA							
Sawnwood b/	m3	137.31	149.24	141.46	143.35	1.89	1.3
Wood-based panels c/	m3	38.07	41.13	42.62	44.90	2.28	5.3
Paper and paperboard	m.t.	82.53	84.40	87.55	91.30	3.75	4.3
Total	m3 EQ a/	577.88	608.65	608.53	628.23	19.70	3.2
Change on previous year							
- Volume			30.77	-0.12			
- Percent			5.3	-			

a/ Equivalent volume of wood in the rough.
b/ Excluding sleepers.
c/ Excluding veneer sheets.

Currency fluctuations strongly affected international forest products trade in 1994 and 1995. For example, the fall in value of the Swedish krona led some importers in the United Kingdom to change import sources from Canada where the Canadian dollar strengthened against the United States dollar. The United States dollar devalued considerably which spurred United States exports, but which hurt other export countries trading in dollars. Examples of these and other effects are illustrated in other chapters.

Prices moved up for many forest products in 1994, setting records for pulp and paper, coniferous and non-coniferous sawnwood and non-coniferous logs. However, as fast as prices rose in 1994 for sawnwood, they came back down in mid-1995, but not to former low levels. Coniferous log prices, which had moved up in 1994, were under pressure in mid-1995 from sawmillers to come down with the price of sawnwood, but due to the heightened demand for wood fibre from pulp producers, log prices have retained the recent gains, especially after losing ground in 1992 and 1993. Pulp and paper, including recycled paper, remain at very high prices in mid-1995 and are still rising. This has had the effect of driving sawmills to over produce sawnwood, in order to produce the increasingly profitable chip residues. In North America the prices of panel products, especially plywood and OSB, have softened due to lower demand.

In mid-1995 some sectors of the world's forest products markets have slowed and prices are falling for sawnwood and some other products. Reduced demand in some major consuming countries, United States, United Kingdom, France and Japan, with continued momentum of production, led to market saturation. The factors that drove up demand in 1994 (lowered interest rates, GDP improvements, increasing housing starts, etc.) are absent in 1995. Oversupply of some items, for example whitewood (spruce and fir) sawnwood, threatened industry profits from 1994. Lower prices did not generate immediate sales as stock levels were sufficient during the summer and thus buyers were waiting until prices stabilized.

The UN-ECE Timber Committee, at its session in October 1994, forecast increased apparent consumption in 1995 for Europe and the Russian Federation but weakening markets in North America. Based upon market reports for North America and Europe in mid-1995, these forecast trends appear to be accurate. Analogous reports from the Russian Federation for the first 2 months of 1995 indicate that the Committee's forecasts for increases in sawnwood and some wood-based panel's production may have been optimistic as production was down from the same period in 1994.

Chapter II

ECONOMIC SITUATION OF EUROPE AND NORTH AMERICA IN 1994 AND EARLY 1995

A. Introduction

Developments on markets for forest products are strongly influenced by broader economic developments, for the economy as a whole and for those sectors which consume forest products, notably construction. As in previous years, chapter I of the *Annual Review* presents an overview of these developments, as an introduction to the more specialised discussion in later chapters.

The next two sections, on developments in the market economies and in the countries in transition respectively, are based on the *Economic Survey for Europe in 1995*, published by the secretariat of the UN Economic Commission for Europe in April 1995. The last section presents available information on trends in construction, notably housing, in Europe, the United States of America and Japan.

B. Developments for the western market economies

The section presents trends for economic growth in 1994 and 1995, and then more detailed information on those factors of most interest for analysis of forest products markets, namely industrial output, residential investment, prices, fiscal policy, money and interest rates, exchange rates and commodity prices, concluding with the outlook for 1995.

(i) Economic growth

Economic developments took a more favourable turn in *western Europe* in 1994 than was widely expected at the beginning of the year. In fact, the recovery gained considerable momentum in the course of the year and had spread to all major sectors by the beginning of 1995.

Preliminary estimates in the individual countries yield an average increase in real GDP of 2.6% in 1994, following a decline of 0.3% in 1993. With the exception of Sweden, all countries where output fell in 1993 witnessed rates of economic growth which more than offset these previous losses (table 2 and graph 1).

Among the four major west European economies the strongest annual growth rate was in the *United Kingdom* (3.8%). Although a cyclical upswing has been under way in the United Kingdom since 1992, it was only in 1994 that the average level of output in 1990, the year of the previous cyclical peak, was finally surpassed.

A major feature of developments in 1994 was the relatively strong recovery in *west Germany*, which contrasts with the rather modest growth expectations prevailing at the beginning of the year. Exports and residential construction were the major driving forces behind the rise in real GDP by 2.3% in 1994. In *east Germany* the major building blocks appear now to be in place for a self-sustained recovery. Real GDP rose by 9.2% in 1994. For total Germany real GDP rose by 2.9% in 1994.

In *France*, real GDP rose by about 2.7% in 1994 following a decline by 1.5% in preceding year. This marked recovery was supported *inter alia* by strengthening export growth and favourable changes in stockbuilding. There was also a moderate upturn in private consumption, partly a reflection of government incentives. Changes in stocks and buoyant exports were the major contributors to the rise in real GDP of 2.2% in *Italy*.

Among the smaller west European economies, there was relatively strong output growth in Denmark, Finland, Ireland and Norway. In fact, 1994 marked a turn around from the long and severe

Table 2
Real GDP in western Europe and North America, 1992-1995
(Percentage change over previous year)

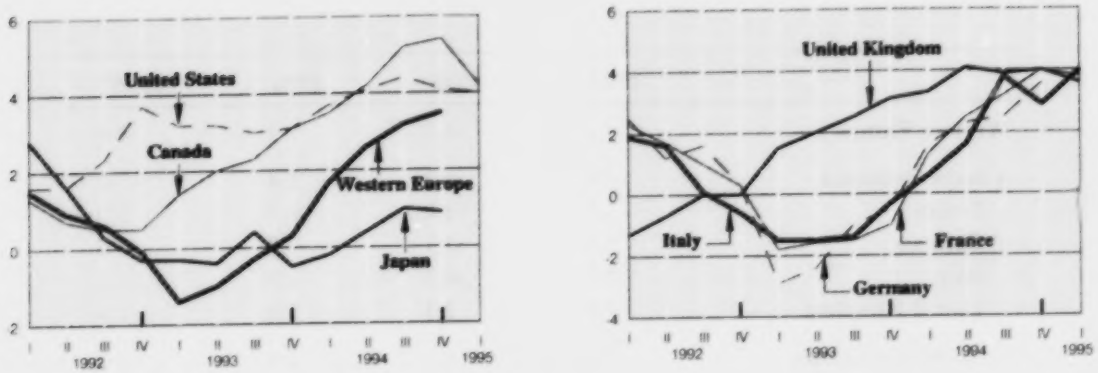
	1992	1993	1994	1995[a]
Western Europe	1.1	-0.1	2.5	3.0
4 major countries	1.0	-0.3	2.8	3.0
France	1.2	-1.0	2.5	3.0
Germany	2.2	-1.1	2.8	3.0
Italy	0.7	-0.7	2.3	3.0
United Kingdom	-0.5	2.1	3.8	3.0
13 smaller countries	1.2	0.1	1.8	3.0
Austria	1.8	-0.1	2.8	3.0
Belgium	1.9	-1.7	2.3	3.0
Denmark	0.8	1.5	4.6	3.5
Finland	-3.6	-1.6	3.9	5.0
Greece	0.8	-0.5	1.0	1.5
Ireland	5.0	4.0	6.3	6.5
Netherlands	1.3	0.4	2.4	3.0
Norway	3.4	2.3	5.5	4.5
Portugal	1.5	-0.9	1.0	2.5
Spain	0.7	-1.1	1.9	3.0
Sweden	-1.4	-2.6	1.8	2.0
Switzerland	-0.3	-0.9	2.1	2.5
Turkey	5.5	5.9	-3.9	3.5
North America	2.2	3.0	4.1	3.0
Canada	0.6	2.2	4.5	4.0
United States	2.3	3.1	4.0	3.0
Total Above	1.6	1.5	3.3	3.0
Memorandum item:				
Japan	1.1	0.1	1.0	2.5
Total above, including Japan	1.5	1.3	3.0	3.0

Source: National statistics; UN/ECE secretariat estimates.
[a] Forecasts rounded to the nearest 0.5 percentage point

Graph 1

Real GDP in the western market economies, 1992-1995

(Percentage change over the same quarter of previous year)



Source: National statistics, ECE secretariat estimates.

Note: Data for Germany pertain to west Germany. Western Europe covers the standard 17 countries excluding Belgium, Greece, Ireland, Portugal and Turkey.

recession which had afflicted Finland and Sweden since 1991. It is noteworthy, however, that the average level of output in Finland in 1994 was still nearly 9% below that of 1990. And in Sweden, where the recession was less pronounced, the corresponding gap was about 3%.

There was only modest growth of around 1% in Greece and Portugal in 1994. Turkey deviated conspicuously from the common pattern, with the economy moving from boom in 1993 to bust in 1994.

The better than expected economic performance in western Europe during 1994 reflected in the main a marked strengthening in export growth, which initially originated in overseas markets. The ensuing rise in domestic activity levels and improved sales prospects stimulated stockbuilding. These demand impulses gradually fed through to intra-west European trade and this was a major factor in a strong acceleration in the volume growth of world trade by about 9% in 1994 compared with only 4% in the previous year.

In the *United States*, the cyclical upswing showed no signs of slowing down in 1994 in spite of tighter monetary policy; for the year as a whole, real GDP rose by 4.1%; this is the highest growth rate since 1984, when it was 6.2%. The cyclical upswing strengthened also in *Canada* resulting in a somewhat larger annual rise in real GDP (4.5%) than in the United States.

In *Japan*, the economy has emerged slowly from recession supported by public sector and housing investment. But overall growth forces continued to be restrained by balance sheet adjustment problems in the private business and the strong appreciation of the yen. In the event, real GDP rose by only 0.6% in 1994.

For the *western market economies* combined, real GDP increased by 2.9% in 1994 compared with preceding year.

(ii) Industrial output

There was a strong rebound in industrial output in *western Europe* in 1994 following a deep recession in 1992-1993. For the year as a whole the increase was some 4.5%. This was the first rise in annual output since 1990, and it more than made up for the decline in the three preceding years.

Intercountry differences in industrial output growth in western Europe continued to be influenced by the stage of the business cycle - which favoured countries with strong specializations in basic products

and investment goods - and changes in relative exchange rates that had mainly occurred since autumn 1992 and which boosted the price competitiveness of firms in countries with depreciating currencies (Finland, Italy, Spain, Sweden and the United Kingdom). Accordingly, there was a boom in the export sectors, including those of the two largest European forest products exporters, Finland and Sweden.

In the *United States*, continuing vigorous domestic demand was a major factor behind the boom in industrial output, which rose by some 5.5% in 1994.

(iii) Residential investment

Residential investment increased in the majority of countries of *western Europe* in 1994. Contributory factors were, *inter alia*, the low long-term interest rates prevailing until the beginning of the year, government subsidy schemes, and shortages, which were partly due to demographic developments (such as migration) and which made it more profitable to invest in new dwellings.

A conspicuous feature over the past four years was the surge in construction investment in *eastern Germany*. In real terms these expenditures rose by some 22% in 1994 and altogether by more than 100% since 1991. This reflects the considerable efforts made to improve infrastructure, and to modernize, repair and enlarge the stock of housing and industrial buildings. A major factor in the investment boom is the availability of substantial investment allowances, but the investment pledges which were part of the privatization deals negotiated by the *Treuhand* also help to explain the resilience of business investment to cyclical factors. Total fixed investment rose by 16.5% in 1994 in east Germany. In contrast, the increase in west Germany was only 1.2%, strong growth in residential investment more than offsetting declines in business and public investment. Residential investment was spurred to some degree by the phasing out at the end of 1994 of special government subsidies to foster housing construction, which led investors to bring forward projects

In the *United States*, residential investment activity slowed down in the second half of 1994, in response to rising mortgage rates, but for the year as a whole there was a strong increase by 8.6%.

(iv) Prices

There was a significant increase in *international raw materials prices* in the course of 1994, which, however, tended to level off in the final months of the year. Underlying trends in these prices are of interest as they often move in parallel to those of forest products.

This upward movement in international commodity prices during 1994, which in real terms (international raw materials prices deflated by export prices of western manufactures) had fallen in 1993 to their lowest level since 1972, was largely a reflection of the global recovery, which stimulated demand for industrial materials and energy products used as inputs in industrial production. Demand was also boosted by the rebuilding of inventories in view of improved sales prospects and, partly, speculation.

Prices of basic industrial materials, which started to firm at the end of 1993, rose swiftly throughout 1994. This pertains notably to non-ferrous metals used in manufacturing industry, including aluminium and copper. On average, industrial raw materials prices rose (on a dollar basis) by 17% in 1994 compared with the preceding year. This was the first annual increase since 1990. Prices of food and agricultural products rose even by some 24%. In contrast, crude oil prices fell by 6.2%, but this masks a strong upturn between February and July 1994, which was partly reversed thereafter. Given that coal prices rose by some 4%, there was a somewhat smaller fall in total energy prices, although they are still low compared to the early 1990s. The annual price increase for all commodity groups combined was 2.4% in 1994. Of course, price increases for were lower in those countries whose currency appreciated against the dollar.

Although there was a marked strengthening in economic growth in the western market economies in 1994, overall inflationary pressures as measured by the *consumer price index* have tended to moderate further. The annual inflation rate was only 2.4% in 1994 compared with 2.8% in the preceding year. The rise in prices of international commodities in 1994 put some upward pressure on import and producer prices, but, in general, has not had any significant influence on price developments at the final consumer level. The tendency of inflation rates in western Europe to converge at an increasingly low level continued in 1994.

(v) Public finances

The overall stance of fiscal policy in the western market economies in 1994 was marked by efforts to consolidate government finances, given significant increases in structural budget deficits and public debt since 1989. Among the major economies, only Japan pursued a distinctly expansionary policy, but from a much more favourable budget position compared with other countries. General government budget deficits in western Europe fell to 5.9% of GDP in 1994 after reaching a peak of 6.5% in the preceding year. In the United States, there was a significant fall in the budget deficit to some 2% of GDP in 1994, from 3.3% in 1993.

(vi) Money and interest rates

There was increasing divergence in the monetary policy stances of the United States and Germany in 1994. In the *United States*, the Federal Reserve started to tighten monetary conditions in February 1994 in an effort to prevent a rekindling of inflationary pressures. In contrast, the Bundesbank in *Germany* continued to ease monetary conditions cautiously in the first half of 1994, but, given the strengthening recovery, official interest rates were not lowered further during the remainder of the year. Against this background the decline in short-term interest rates, under way in western Europe since autumn 1992, appeared to have petered out. However, short-term interest rates rose throughout 1994 in the United States and were higher than German rates from the autumn.

A striking feature of monetary developments was the significant rise in long-term interest rates, which spilled over from the United States to *western Europe*. For the most part, this upward movement reflected changing expectations of future inflation and a rise in the real rate of return, although the relative importance of each of these components is difficult to gauge. The rise in long-term interest rates was regarded as a major downside risk for the sustainability of the recovery, but the potentially restraining effects appear to have been more than offset during 1994 by a significant rise in rates of return on fixed assets.

(vii) Exchange rates

There was a considerable weakening in the dollar exchange rate against the deutsche mark and the yen in the course of 1994. Contributory factors have been, *inter alia*, lingering concerns about the size of the persistent United States current account deficit and changing expectations about interest rates in Germany. Against the background of the peso crisis in Mexico the decline of the dollar accelerated sharply in early 1995. This was accompanied by a strong appreciation of the deutsche mark against a number of other west European currencies (graph 2).

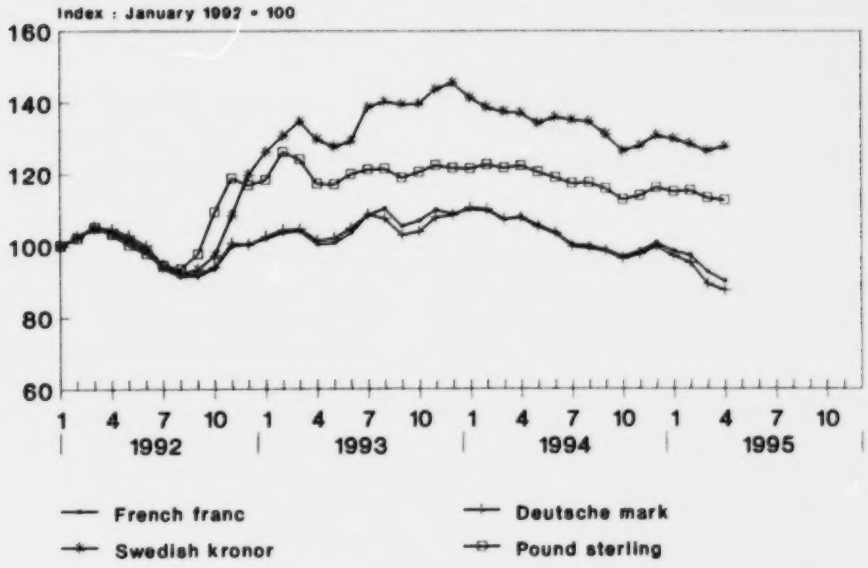
The dollar also depreciated markedly against the yen in 1994, falling to successive post-war lows of less than 100 yen, first in June/July and then in autumn 1994.

Speculative selling pressures on the dollar strengthened significantly in early 1995. There was a notably strong demand for the deutsche mark and the Swiss franc, which were regarded by investors as safe havens. Against both these currencies and the yen, the dollar fell to a record low in spite of the concerted intervention of major central banks in early March 1994.

In *western Europe*, exchange rate changes (measured against the deutsche mark) were, in general, relatively moderate during 1994. There were, however, rather persistent selling pressures, notably on the lira, the Portuguese escudo, the peseta and the pound sterling. There was also a gradual depreciation of the French franc, which remained, however, within the former narrow fluctuation margins of the ERM (the European Monetary System's Exchange Rate Mechanism).

The downward pressure on these currencies accentuated in early 1995, *inter alia*, a renewed reflection of the surge in international demand for the deutsche mark as a safe haven. The direct implication of this, via cross-trading, was a conspicuous weakening of nearly all west European currencies against the deutsche mark. Thus, the French franc, the lira and the pound sterling fell to new lows against the deutsche mark. And the peseta and the Portuguese escudo could not escape devaluation within the ERM at the beginning of March 1995, in spite of the enlarged fluctuation margins. In several countries (Belgium, Denmark, France, Ireland, Portugal, Spain and Sweden), central

Graph 2
Exchange rates of selected currencies against the United States dollar



banks raised official interest rates to stem the weakening of their currencies.

(viii) Outlook for 1995

Short-term economic indicators available at the time of writing suggest that the cyclical recovery has continued in western Europe during the first few months of 1995, albeit at a moderate rate. In general, the composition of growth has changed as projected in late 1994. Domestic demand, notably fixed investment, has strengthened. Export growth continues to be an important pillar of the upswing, but stronger import demand means that the growth contribution stemming from changes in real net exports will be much reduced compared with 1994. In the *United States*, economic growth slowed down significantly in the first quarter of 1995, a feature which appears to have accentuated in the second quarter. The rate of economic expansion also decelerated sharply in *Canada*. In *Japan*, the economic recovery has gathered only little momentum so far, in spite of a series of fiscal stimulus packages. The upshot is that in the industrialized countries combined, the momentum of economic growth has weakened in the first half of 1995 as compared with the second half of 1994.

Short-term economic prospects have been clouded by the significant changes in the pattern of real exchange rates that occurred during the first months of 1995. The strong appreciation of the deutsche mark and yen and a number of other west European currencies has meant a loss in price competitiveness with consequential negative repercussions for overall output growth in these countries.

In contrast, in those countries which have seen their currencies depreciate - such as the United States, Italy, Spain and the United Kingdom - there will, *ceteris paribus*, be an additional stimulus to net exports. At the same time, however, there has been a tightening in the stance of monetary policy in a number of west European countries to stem the downward pressure on the exchange rate of their currencies and curb rising inflationary pressures, and this will tend to restrain domestic growth forces.

On the other hand, long-term interest rates have fallen in the United States, Germany and many other countries during the first months of 1995. This probably reflects *inter alia* a downward adjustment of excessive inflationary expectations in financial markets in response to the changing economic environment. Lower long-term interest rates, in turn,

could well support interest-sensitive demand components.

The net effect of these various exchange rate changes and the partly associated changes in interest rates on short-term economic performance is difficult to gauge, given also that changes in these variables tend to affect domestic activity levels with a more or less long lag time. Developments will also be influenced by possible changes in the stance of economic policy, notably as regards monetary policy in the United States and Germany.

In any case, the international growth cycle appears to have lost momentum, and growth forecasts for many countries have already been lowered somewhat. In western Europe, real GDP is currently projected to rise by some 3% in 1995. A similar growth rate is expected for the United States, which implies that actual output growth during the year will be more in line with productive capacity. In contrast, real GDP in Japan is generally seen to increase by only little more than 1% in 1995. For the industrialized countries combined this still yields an average rate of output growth of slightly below 3% in 1995. Looking a year further ahead, the west European recovery is seen to continue in 1996, however, without, gaining further momentum. Rather, there could well be a slowing down in the rate of economic growth. It goes without saying that such an outcome will not help to alleviate the situation in the labour market: unemployment rates will therefore remain very high. In fact, to achieve a significant reduction in the unemployment rate would require a sustained rate of output growth significantly above 3%.

C. Developments for the economies in transition of eastern Europe and the former Soviet Union

(i) The transition countries of eastern Europe

Economic performance also improved markedly in the transition economies of *eastern Europe* in 1994, although in their case this reflected not a cyclical upturn as in western Europe but the start of recovery from a structural or "transition" slump in output which was on the scale of that experienced world wide in the 1930s. The recovery began in Poland in 1992 and has since spread to virtually all the economies of eastern Europe. In 1994 output continued to fall only in the Former Yugoslav Republic of Macedonia (no data are available for Bosnia and Herzegovina). Everywhere else it rose, marginally in Bulgaria and Croatia (0.2% - 0.8%) but by as much as 5% in Poland and Slovenia, and unofficial estimates suggest even larger increases in Albania and Yugoslavia, where output had fallen massively since 1990 (table 3 and graph 3).

Thus, for the first time since the transition process got under way five years ago, there was an increase in aggregate east European output – by just under 4%. The indications are that the pace of activity was getting stronger in most countries in the latter half of 1994 and it seems reasonable to expect an average growth rate of 4% in 1995. There is likely to be some deceleration in Hungary, perhaps to zero growth as policies are brought to bear on the growing budget and current account deficits, and in Romania, if macroeconomic policy is tightened somewhat as part of the agreement with the IMF. But in most of the other east European countries, last year's rates of growth should be maintained or improved upon.

These developments in overall activity are most encouraging, not least for those who have suffered directly the considerable costs of transition to a market economy, but they need to be placed in perspective. After a decade of virtual stagnation, output in eastern Europe fell on average by more than 20% between 1989 and 1993. If the expected growth rate in 1995 of 4% is sustained, it will still take until virtually the turn of the century before the activity level of 1989 is equalled again. This of course is no more than arithmetic, but it illustrates the scale of the problem facing the governments of the transition economies as they try to grapple with the still considerable problems of transition, and at the same time try to maintain popular support for the entire process. Nevertheless, it should be borne in mind that forecasts for the transition economies have been very unreliable throughout the period since 1989: not only was the transition recession grossly underestimated but so was last year's recovery. If growth proves stronger than expected this will help to strengthen business expectations and encourage a take-off in fixed investment.

On average, total fixed investment (largely financed by the resources of the enterprises themselves, not by the intermediation of domestic savings or by foreign investors) rose by some 5% last year. The growth of enterprises' own resources was in turn a function of large productivity gains,

Table 3
European transition countries: economic activity, 1991-1995
(Percentage change over same period of preceding year)

	NMP or GDP[a]					Gross industrial output				
	1991	1992	1993	1994	1995[b]	1991	1992	1993	1994	1995[b]
Alabnia	-27.7	-9.7	11.0	7.4*	6.0	-41.9	-30.1	2.5	-2.0*	2.0
Bulgaria	-11.7	-5.7	-1.5	0.2[c]	2.0-2.2	-22.2	-15.9	-10.0	2.0	..
Bosnia and Herzegovia	..	..	..	..	..	-16.2	..	..	..	..
Croatia	-20.9	-9.7	-3.7	0.8	4.0	-28.5	-14.6	-5.9	-2.7	2.0
Czech Republic	-14.2	-6.4	-0.5	2.7	3.7	-24.4[d]	-7.9	-5.3	2.3	..
Hungary	-11.9	-4.3	-2.3	2.0*	0-1	-19.1	-9.8	3.9	9.1	4-6
Poland	-7.0	2.6	3.8	5.0	5.0	-11.9	3.9	7.3	13.0	..
Romania	-12.9	-10.0	1.3	3.4	2.8	-22.8	-21.9	1.3	3.1	..
Slovakia	-11.2	-7.0	-3.2	4.8	4-5.5	-17.6	-14.1	-10.6	6.4	..
Slovenia	-8.1	-5.4	1.3	5.0	5.0	-12.4	-13.2	-2.8	6.4	5.5
The FYR of Macedonia[e]	-12.1	-13.4	-14.1	-7.2	0.8	-17.2	-15.8	-14.6	-9.0*	0.7
Yugoslavia[e]	-11.2	-26.2	-27.7	6.5	7.0	-17.6	-22.4	-37.4	1.2	9.0
Eastern Europe	-11.5	-5.9	-1.7	3.7	4.0	-18.5	-10.0	-3.0	6.1*	..
CETE-4	-9.5	-1.1	1.4	4.0	4.1	-16.0	-2.1	2.4	9.7*	..
SETE-8	-13.4	-12.4	-5.9	3.2	4.0	-21.6	-19.5	-9.6	1.8*	..
Armenia	-8.8	-52.3	-14.8	-2.0	..	-7.7	-48.2	-10.3	6.9	..
Azerbaijan	-0.7	-22.6	-23.1	-22.0	..	4.8	-23.7	-7.0	-24.8	..
Belarus	-1.2	-9.6	-9.5	-20.0	-(5.7)	-1.0	-9.4	-7.4	-19.3	-(6-9)
Georgia	-20.1	-40.3	-39.4	-30.0	..	-22.6	-45.8	-26.6	-39.7	..
Kazakhstan	-1.8	-13.0	-12.9	-25.0	..	-0.9	-13.8	-14.8	-28.5	..
Kyrgyzstan	-4.2	-16.4	-16.4	-26.0	..	-0.3	-26.4	-25.3	-24.5	..
Rep. of Moldova	-18.7	-28.3	-4.8	-30.0	..	-11.1	-27.1	0.3	-29.9	..
Russian Federation	-12.8	-19.2	-12.0	-15.0	-9.0	-8.0	-18.0	-14.1	20.9	-13.0
Russian Federation[f]	-14.3	-22.0	-13.0	-16.0	..	..	..	..	..	..
Tajikistan	-8.4[f]	-31.0[f]	-17.3	-12.0	..	-3.6	-24.2	19.5	-30.8	..
Turkmenistan[f]	-4.7	35.8	10.0	..	..	4.8	-14.9	4.0	-25.0	..
Ukraine	-11.6	-13.7	-14.2	-19.0	..	-4.8	-6.4	-22.4[g]	-27.7	..
Uzbekistan	-0.5	-11.1	-2.4	-4.0	..	1.5	-6.7	-7.0[g]	1.0	..
CIS	-11.5	-17.8	-11.5	-16.0	..	-7.8	-18.0	-12.0	-23.0	..
Estonia	-10.0	-14.2	-8.6	-[h]	..	-7.2	-38.9	-26.6	-7.0[h]	..
Latvia	-10.4	-34.9	-14.9	-2.2	..	-0.7	-34.8	-38.1	-7.0[i]	..
Lithuania	-13.1	-39.3	-27.1	-6.5[c]	..	-3.5	-30.0	-34.2	-27.8	..
Baltic States	-11.5	-32.5	-17.5	-3.7	..	-3.4	-33.5	-33.9	-16.6	..
Total transition economies	-11.6	-15.1	-9.4	-10.2	..	-9.0	-14.9	-12.7	-15.3	..
Ex-GDR länder	-19.2	7.8	5.8	8.9	9.0	49.1	-6.4	5.8	15.0*	..

Source: National statistical publications and statistical office communications to UN/ECE; IMF estimates for Albania; non-governmental forecasts Aggregates for eatern Europe, the Baltic States and total transition economies are UN/ECE secretariat computations based on 1992 weights and some estimates for missing components. Forecastes for 1995 are forecasts of national conjunctural institutes.

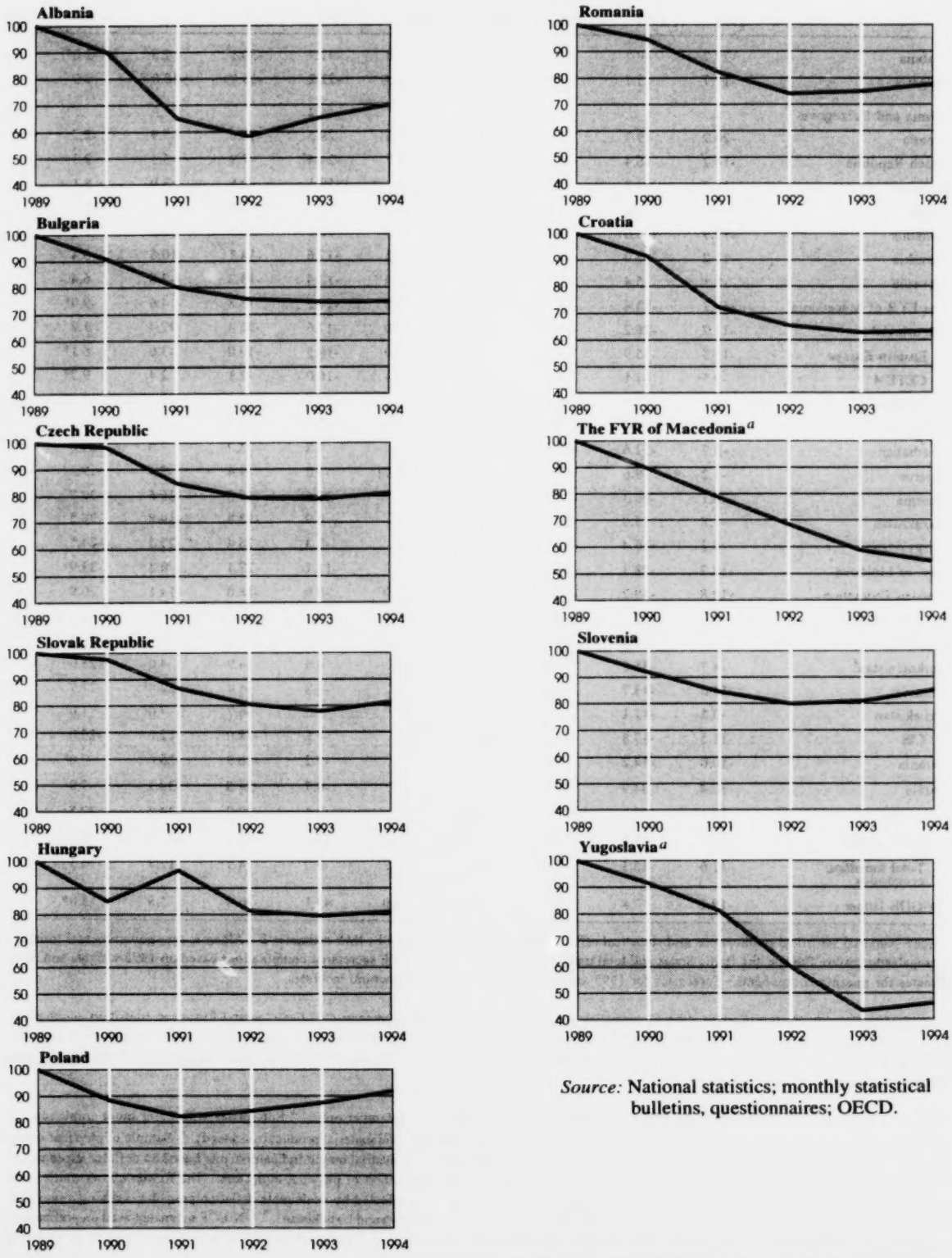
Note: Aggregates are: *Eastern Europe* (the 12 countries above that line), with sub-aggregates *CETE-4* ("central European transition economies": Czech Republic, Hungary, Poland, Slovakia) and *SETE-8* ("south European transition economies": Albania, Bulgaria, Romania, and the 5 Yugoslav successor States); *CIS* (12 member countries of the Commonwealth of Independent States); *Baltic States* (Estonia, Latvia, Lithuania), and *total transition countries*.

[a] Gross domestic product unless otherwise noted. [b] 1995 forecasts. [c] January-September only; [d] Enterprises with 25 or more employees. [e] Gross material product (value added of the material sphere including depreciation). [f] Net material product (produced). [g] Sample of physical output indicators. Since March 1993, the Ukrainian Ministry of Statistics has published two industrial output indicators: one based on deflated gross output value analogous to those shown for other CIS countries, and one based on an aggregation of physical indicators. The former shows much more moderate rates of output contraction in 1993 (8% for January-December), but may be affected by inadequate deflation procedures during a period of rapidly accelerating inflation. Similar alternative indicators are also computed by Moldova and Uzbekistan. [h] UN/ECE estimate based on preliminary indicators from the Estonian CSO, 10 March 1995; January-September GDP was -3%. [i] All enterprises (9.5% in enterprises with 50 or more employees, to which quarterly figures refer).

Graph 3

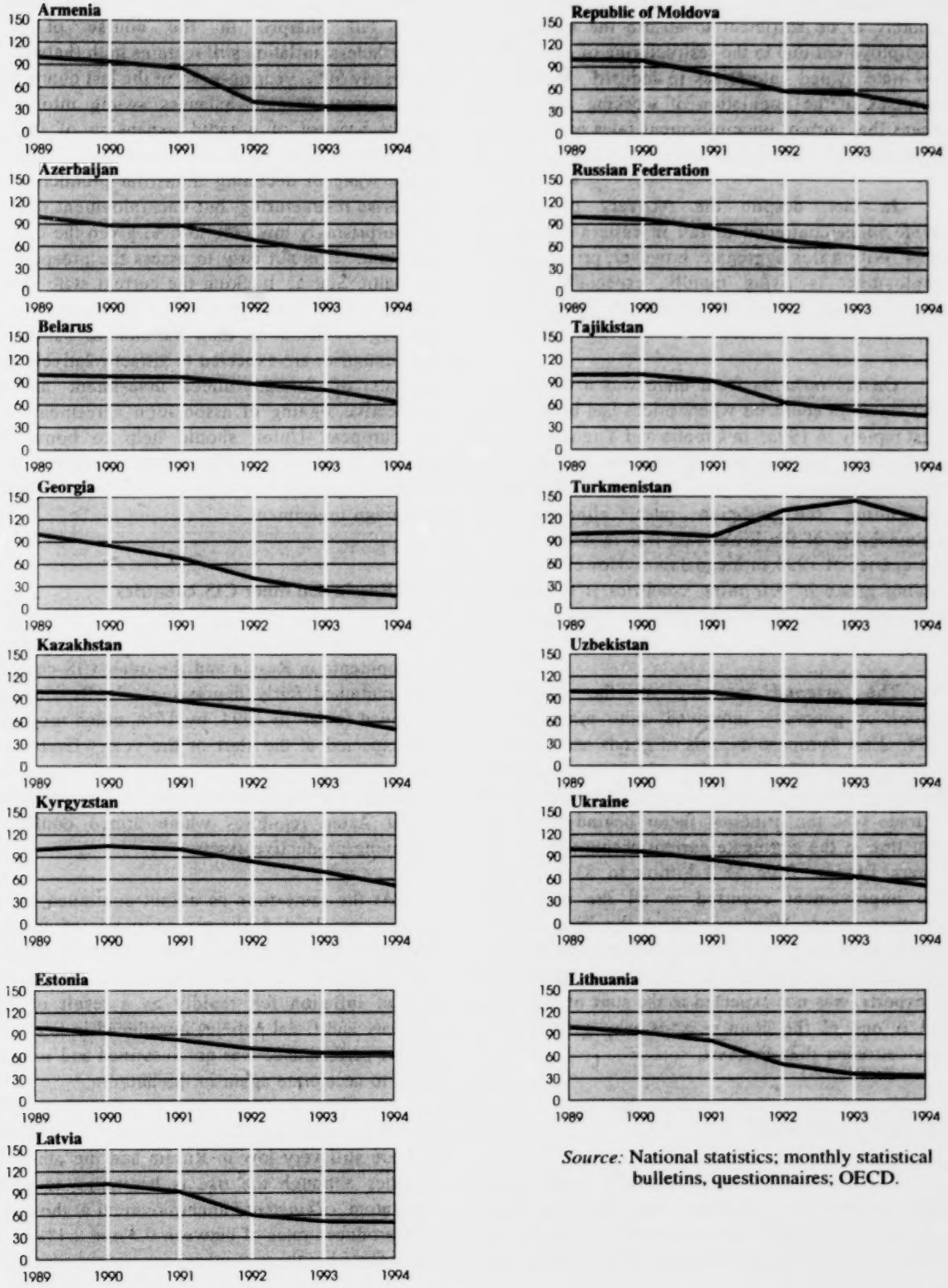
Annual indices of GDP in Eastern Europe and CIS states, 1989-1994

(Indice 1989=100)



Source: National statistics; monthly statistical bulletins, questionnaires; OECD.

Graph 3
(continued)
Annual indices of GDP in Eastern Europe and CIS states, 1989-1994
(Indice 1989=100)



Source: National statistics; monthly statistical bulletins, questionnaires; OECD.

a moderate growth of wages and increases, also moderate in general, of producer prices. Much of the current investment activity is likely to be focused on rationalization and modernization. This will lead to job creation in new, private enterprises but is unlikely to be sufficient to absorb the increase in unemployment due to the restructuring of agriculture and state owned enterprises in industry, as well as increases in the population of working age. This means that current unemployment rates are unlikely to be reduced significantly for some time.

In fact, despite the recovery of output, *employment* continued to fall in eastern Europe in 1994. Within this aggregate, however, private sector employment is rising rapidly, especially in the service sectors, but not yet by enough to absorb the losses in the state sectors.

On the *inflation* front there was a significant slow-down in countries where prices had been rising most rapidly in 1993. In Croatia and Yugoslavia, the stabilization programmes of late 1993 and early 1994, respectively, had a particularly dramatic impact on cutting the inflation rates, although the sustainability of the lower rate was in doubt in the last quarter of 1994 in Yugoslavia. However, in the leading group of reforming countries it is proving much more difficult to get inflation rates down to single digits.

The *external position* of the transition economies generally improved quite markedly in 1994. East European exports of goods and services rose by some 18% (in dollar value), nearly double the rate of increase in imports, and this improvement in trade was the principal factor behind the large reduction in the aggregate current account deficit of eastern Europe, from $8.3 billion to $3.4 billion. The improvement occurred in all the individual countries except Hungary, where the large deficit continued to rise. This considerable improvement in the external accounts and, in particular, in the growth of exports, was not expected at the start of last year and is one of the main reasons why growth was much stronger than forecast.

(ii) The Baltic States

The *Baltic States* have generally made much better progress in stabilizing and reforming their economies than other former members of the Soviet Union. Output was still falling in 1994 in Latvia and Lithuania, although by much smaller amounts than in 1993, while Estonia appears to have reached the bottom of the recession (with zero growth). Progress has been made in stabilizing the three economies: public deficits are largely under control and inflation rates fell sharply in the course of 1994. Nevertheless, inflation still remains high (between 30 and nearly 50%, year-on-year, in the last quarter) and their current account balances swung into deficit mainly because of a rapid expansion of imports. Employment in all the Baltic States continued to fall in the wake of declining industrial production and enterprise restructuring, but unemployment rates are still surprisingly low (2% to 6%) given the collapse of output. It is not easy to assess the prospects for the Baltic States: tracking the current state of their economies is difficult because of the incompleteness and large revisions to their national accounts. All three countries are expected to attract relatively large amounts of foreign direct investment and the prospective signing of association agreements with the European Union should help to boost their exports to the west. There thus appears to be a reasonable prospect of export-led growth, supported by foreign investment.

(iii) Russia and other CIS countries

In contrast to eastern Europe, economic developments in Russia and the other CIS countries have remained fairly depressing. In Russia, GDP continued to fall in 1994, by 15%, much more than was expected at the start of the year. Even larger cuts in output occurred in most of the other CIS countries, but especially in those Caucasian and central Asian republics where armed conflict is destroying productive assets.

At the same time as output continued to fall, *inflation* accelerated sharply in many of the CIS countries where there was a general lack of effective monetary and fiscal policies. In Russia and Ukraine, rates of inflation fell rapidly as a result of tight monetary and fiscal policies introduced in late 1993; but this performance was not sustained and inflation began to accelerate again in the autumn.

Despite the large falls in output, *unemployment* rates are still very low in Russia and the other CIS countries although the rise is beginning to gather momentum. *Registered* unemployment at the end of 1994 produced rates of between 0.3 and 2.1% of the labour force but these numbers are widely considered

unrealistically low. Nevertheless, low unemployment in the CIS is not just a statistical artefact: it reflects, *inter alia*, the stance of macroeconomic policy and the lack of coherent restructuring programmes which results in a large amount of over-employment (or "hidden" unemployment) in large State-owned enterprises.

In contrast to eastern Europe, there was a sharp deterioration in the Russian *current account* in 1994, swinging from a surplus in 1993 to a deficit of the same order of magnitude (namely, nearly $3 billion). The trade surplus remained virtually unchanged, and so the deterioration in the current account was mainly due to a much increased deficit on services (especially for tourism the deficit for which increased by $2.6 billion) and net interest paid abroad.

(iv) Outlook for 1995

Assessing the short-run outlook for *Russia* is still extremely difficult. A further decline in output in 1995 seems likely although it should be rather less than last year. But the outlook depends crucially on whether stabilization policies can be maintained consistently without being thrown off course by the demands of the agricultural and industrial lobbies. After three years of unsuccessful attempts to stabilize the Russian economy, policy makers now have a credibility problem to overcome as well. Whether the recent IMF agreement can tilt the balance in favour of an effective set of stabilization and restructuring policies is one of the major uncertainties.

D. Developments for construction

Construction, including renovation and maintenance, along with the closely related furniture sector, is by far the largest market sector for sawnwood and wood based panels. Available data on these markets are presented below.

(i) European construction

In 1994, according to EUROCONSTRUCT, a consortium of economic research institutes with special knowledge of the construction sector, as reported in *IFO Schnelldienst*, May 1995. *European* construction in aggregate (i.e., new dwellings, renovation, commercial and public construction and civil engineering) increased by 1.2% over 1993. However, the new housing sector showed an increase of 5.2%, and renovation and maintenance a rise of 1.9% (table 4). In 1994, these two sectors, which are the most important for forest products consumption, accounted for 26.5% and 32.4% respectively of total construction in the EUROCONSTRUCT region, which includes most western European market economies. In Germany, Europe's largest housing market, construction (total) rose by 4% (in the new *Länder* by about 15%, and by 1-2% in the former Federal Republic). In fact Germany was very much the locomotive of European construction, as many other countries reported slow increase or stagnation. In July 1995, it was announced by the minister responsible that, although total construction investment in Germany is expected to grow slowly over the year by 1%, residential construction in the first 4 months of 1995 in western Germany was down by 16% in the same period in 1994. In the new *Länder*, however, dwelling construction in the first quarter rose steeply and was nearly 22% higher than in the first quarter of 1993.

The crisis in Nordic construction continues: in 1994, only 17,000 dwellings were completed in Sweden, compared to 67,000 in 1991. A similar, although not so acute, picture applies to the other Nordic countries. In fact between 1991 and 1994, the EUROCONSTRUCT total of dwelling completions was roughly unchanged, an increase of 150,000 (60% in three years) in Germany counterbalancing falls elsewhere.

EUROCONSTRUCT forecasts for 1995 an increase of 1.8% for total construction, with 2.5% for new dwellings and 1.4% for renovation. By country, for total construction, an increase of 1.5% is forecast for Germany, and rates around 1% for France, Italy and the United States. However, dwelling authorizations in Germany in the first four months of 1995 were 2.7% below those of the some period in 1994 with the steepest drops for one- and two-family units (-9%). For Italy, residential construction is expected to decrease. Rapid growth, recovering lost ground, is forecast for Finland (7%) and Norway (5%), but no significant growth for Denmark or Sweden (table 5).

Table 4
Construction in western Europe, by sector, 1991-1995
(% change over previous year)

	1991	1992	1993	1994	1995
New dwellings	-2.4	+2.0	-1.7	+5.2	+2.5
Commercial	-2.4	-6.5	-12.8	-4.0	+2.6
Public construction	+4.5	+2.8	-1.9	-0.7	0.0
Civil engineering	+3.0	-1.2	-5.0	-0.3	+1.7
Renovation	-0.1	+0.5	-1.1	+1.9	+1.4
Total construction	-0.2	-0.7	-4.2	+1.2	+1.8

Source: EUROCONSTRUCT. 1994 data are estimates and 1995 figures are forecasts

Table 5
Total construction, 1991-1995
(% change over previous year)

	1991	1992	1993	1994	1995
Austria	+5.1	+4.9	+2.3	+3.8	+2.6
Belgium	+3.0	+3.5	-1.5	+1.5	+3.0
Denmark	-9.1	-0.8	-4.2	+5.2	+1.0
Finland	-14.0	-17.0	-14.0	-3.0	+7.0
France	+0.2	-3.0	-6.0	-0.2	+0.9
Germany	+2.7	+4.3	-0.8	+4.0	+1.5
Ireland	-0.2	+0.2	-1.1	+6.1	+6.5
Italy	+1.6	+0.8	-5.7	-2.8	+1.0
Netherlands	+0.6	+1.4	-3.3	+1.5	+4.2
Norway	-4.8	0.0	-3.1	+4.0	+5.0
Portugal	+4.5	+2.5	0.0	+1.0	+6.5
Spain	+4.0	-6.0	-8.1	+1.2	+2.5
Sweden	-3.3	-5.7	-9.5	-5.3	+0.2
Switzerland	-5.6	-2.3	-2.0	+3.7	+1.7
United Kingdom	-7.0	-3.7	-1.8	+2.4	+1.4
Total	-0.2	-0.7	-4.2	+1.2	+1.8

Source: EUROCONSTRUCT. 1994 data are estimates and 1995 figures are forecasts.

(ii) North American construction

In the *United States*, single family housing starts (the most intense users of forest products), which had been at an annual rate of between 1.0 and 1.1 million units (monthly data at annual rate) in 1992 and 1993, rose through 1994 to reach 1.45 million units but have dropped sharply in the first part of 1995, falling below a rate of 1 million units/year in March 1995, to 0.95 million units in May. According to the Chairman of the Federal Reserve, this is a reaction to a slowdown in economic growth and to higher interest rates. The National Association of Home Builders forecast the drop in starts would level out during 1995. *Canadian* housing starts fell in 1994, for the second successive year, to 153,000 units.

(iii) Japanese construction

In *Japan*, housing starts in 1994 were at 1.57 million units, of which 0.72 million units (46%) were wood-frame. This was the second successive year of growth just under 6% per annum, but it did not recover the 1990 level (1.7 million units). 1.5 million starts were expected for 1995, taking account of the new demand after the Kobe earthquake, which counteracted the weakening in demand due to higher interest rates. By mid-1995, housing starts forecasts were reduced to 1.35 million.

(iv) European furniture construction

Overall, the European *furniture* industry partially recovered in 1994 after three years of recession, although France and Germany still suffered from weak domestic demand (table 6). According to FESYP's *Annual Report 1994/1995*, the recovery grew stronger in 1995. Particularly noteworthy was the strong growth of production and exports by Italy's export-oriented furniture sector.

Table 6
European furniture industry in 1994
(% change 1994/1993 in production value of wood and non-wood furniture)

	Production	Exports	Imports
Austria	3.0	...	...
Belgium	3.2	12.3	7.4
Denmark	16.2	44.3	28.7
France	-1.0	9.0	-1.4
Germany	-0.6	7.4	-6.0
Ireland	17.0	50.0	2.5
Italy	7.0	19.2	17.0
Netherlands	4.3	8.8	...
Norway	7.6	18.1	12.4
Portugal	10.0	16.0	-1.6
Spain	8.7	43.0	10.0
Sweden	...	20.5	24.3
Switzerland	4.0	-8.7	2.7
United Kingdom	4.3	28.6	14.5

Source: Union Européenne de l'Ameublement (UEA) as reported in the *Annual Report 1994-1995* of FESYP (European Federation of Associations of Particleboard Manufacturers).

Chapter III

TRENDS IN THE SUPPLY, TRADE AND CONSUMPTION OF FOREST PRODUCTS

A. Roundwood

(i) Roundwood supply

Removals of roundwood in *Europe* in 1994 advanced by 7.9% for coniferous to 235.5 million m^3 and by 1.9% for non-coniferous to 107.2 million m^3 over 1993 (table 7). "Roundwood" includes "industrial wood in the rough" plus fuelwood; "industrial wood" combines sawlogs, veneer logs, pulpwood (round and split) and other industrial wood. Removals or production of the major components of industrial wood in the rough increased with demand for their end products, by 11.4% for sawlogs and by 4.1% for pulpwood.

Countries like Finland and Sweden supplying burgeoning export sawnwood, pulp and paper markets and those supplying a large domestic demand, like Germany, naturally harvested greater volumes than in 1993. Finland and Sweden had record levels of roundwood production in 1994. Countries which reported roundwood statistics from central and eastern Europe were not universally higher than in 1993 as Hungary's log removals continued their 5-year trend and fell by 19.1%. Fuelwood removals shrunk as fossil fuel prices remained low.

In the *United States* coniferous roundwood removals continued falling, by 1.6% to 275.5 million m^3 as logs from National Forest System lands became less available due chiefly to environmental pressures. A similar scenario exists in *Canada* with increasing pressures from environmental and indigenous peoples groups to restrict forest harvests. Current production statistics for roundwood were not reported by Canada, but roundwood trade statistics and record sawnwood, panel and pulp production levels in 1994 indicate that roundwood removals must have appreciated accordingly. United States non-coniferous roundwood removals moved up slightly, by 1.3% to 211.8 million m^3. Total United States removals, therefore, fell by 1.6 million m^3 to 487.2 million m^3.

The *Russian Federation's* removals of coniferous roundwood fell 34.3% in 1994, to 76.7 million m^3. Non-coniferous removals also fell, by 25.2% to a level of 43.3 million m^3. Russian removals in 1994 of both coniferous and non-coniferous were half the level of 1992 (the first year with data for the Russian Federation alone). Production of coniferous sawlogs and veneer logs fell 26.4% to 42.9 million m^3 while the non-coniferous removals fell at about the same rate to 15.6 million m^3. After rising dramatically in 1993, Russian Federation exports of coniferous wood in the rough fell by 4.7% to 10.1 million m^3. Pulpwood production fell in 1994 by 12.5% to 22.2 million m^3 after rising in 1993 from about the same level in 1992.

The Timber Committee at its October 1994 session forecast increasing production of industrial wood in the rough in 1995 in Europe, up 4.0% to 304.4 million m^3, and a decrease in the United States by 1.0% to 411.9 million m^3. An increase of 3.2% in coniferous sawlog and veneer log production, and an increase of 5.1% in coniferous and non-coniferous pulpwood production comprise the forecast European gain in 1995. In the United States in 1995, production of coniferous logs was forecast to fall by 2.1% to 193.3 million m^3 and coniferous and non-coniferous pulpwood production was predicted to remain steady. Fuelwood production was predicted to increase slightly in 1995 in both regions and the Russian Federation.

(ii) European removals

Removals of roundwood increased in 1994 by 5.9% to reach 342.6 million m^3, still 5 million m^3 below the 1990 level. Of this, coniferous saw and

veneer logs in Europe in 1994 increased by 12.6% in 1994, to 133.2 million m^3, in response to increased demand for sawnwood and plywood (table 8). Finland increased log harvests by no less than 22.6% for both domestic processing needs and export (to Japan), as did Germany, up by 22.1%, and Austria, up by 25.0%. Growth was slower, but still significant for the largest producer, Sweden.

Log prices increased in 1994 in many European countries after being relatively low since 1991 (graph 4). In mid-1995 sawmillers faced with falling coniferous sawnwood prices sought to reduce log prices, but the competing demand from pulp and panel manufacturers kept prices firm.

Non-coniferous roundwood removals increased in Europe in 1994 by 1.8% to 107.2 million m^3, the first increase in 5 years. Sawlogs and veneer logs were produced at a level of 29.3 million m^3, up by 6.5% from 1993.

European removals of *pulpwood* increased 4.2% in 1994 as the pulp and paper market recovery spurred demand for round and split pulpwood, pulp chips and particles and wood residues (all forms contained under "pulpwood"). The greatest increases came from some of the countries in transition to market economy as ameliorations in economies stimulated paper and paperboard demand. The level of pulpwood removals in Sweden decreased, by 2.5% to reach 23.3 million m^3. Part of Sweden's drop in pulpwood production can be explained by a 55.9% increase in lower cost imports of industrial wood, the majority of which was pulpwood from Russia, Latvia and Finland.

At the autumn log sales in 1994 in *France* the sale volumes increased by 0.1 to 0.2 million m^3 over 1993, to 1.9 million m^3 coniferous and to 2.4 million m^3 for non-coniferous. Average prices of coniferous and non-coniferous logs turned up in 1994 after declining for the past four years. In 1995 pulpwood prices in France rose by up to 70% in some cases in 1995 over the past year according to the *Timber Trade Journal*. However, sawlog prices were under pressure as sawnwood prices have weakened during 1995.

In general in 1995, coniferous log removals in the countries in transition increased to meet domestic and export demand. This was true in the Czech Republic, up 17.4% to 5.3 million m^3, the Slovak Republic, up 43.3% to 1.4 million m^3 and Slovenia, up 47.8% to 0.7 million m^3. Pulpwood removals also increased in 1994 in many countries in transition:

	Pulpwood removals (million m^3)	% change 1993 to 1994
Poland	6.3	0.1
Czech Republic	5.0	17.6
Slovak Republic	2.4	7.5
Latvia	1.8	157.1
Hungary	0.9	4.0
Lithuania	0.7	136.0
Croatia	0.5	27.5
Slovenia	0.4	156.4

(iii) North American removals

In the *United States* in 1994, coniferous log production continued to fall, by 3.1% to 165.0 million m^3. This means a drop of 27.9% since the 1988 high of 228.8 million m^3. The United States pulpwood production remained flat in 1994, up 1.0% to 151.5 million m^3.

Non-coniferous sawlog and veneer log production in the United States in 1994 increased 3.1% to a record high 68.5 million m^3; this represents a 43.6% increase in the last 6 years, even through domestic consumption of non-coniferous sawnwood has been decreasing for the last 2 years. However, consumption of small non-coniferous roundwood for OSB furnish, pallets and pulp has increased, as well as exports of sawnwood and pre-defected furniture dimension stock. Prices of United States non-coniferous logs increased in 1994 for the best log grades, as indicated by the bellwether red oak log price, but held steady for lower quality logs (graph 5). In early 1995 the trend in log prices was again up as competition increased and the export market for sawnwood remained strong.

Timber harvests for the United States Pacific Northwest, PNW, (California, Washington and Oregon) have declined from 48.3 to 29.5 million m^3 in the last 6 years, a drop of 39%. This is exclusively due to developments for public lands, as harvest from private forests has remained constant. According to the *Timber Trade Journal*, log exports from the PNW to the Pacific Rim have declined 57% since 1988 due to: laws against exports from national forests; higher prices from domestic mill

Table 7
Roundwood removals in Europe, 1992 to 1994

Product	1992	1993	1994	Change 1993 to 1994	
				Volume	Percent
		(million m3)			(%)
Coniferous	213.7	218.2	235.5	17.3	7.9
Broadleaved	109.2	105.2	107.2	2.0	1.9
Total	322.9	323.4	342.7	19.3	6.0
of which :					
Fuelwood	57.5	57.3	56.0	-1.3	-2.3
Industrial wood	265.4	266.1	286.7	20.6	7.7
- Sawlogs	144.0	145.9	162.6	16.7	11.4
- Pulpwood	108.0	105.0	109.3	4.3	4.1
- Other	13.4	15.2	14.8	-0.4	-2.6

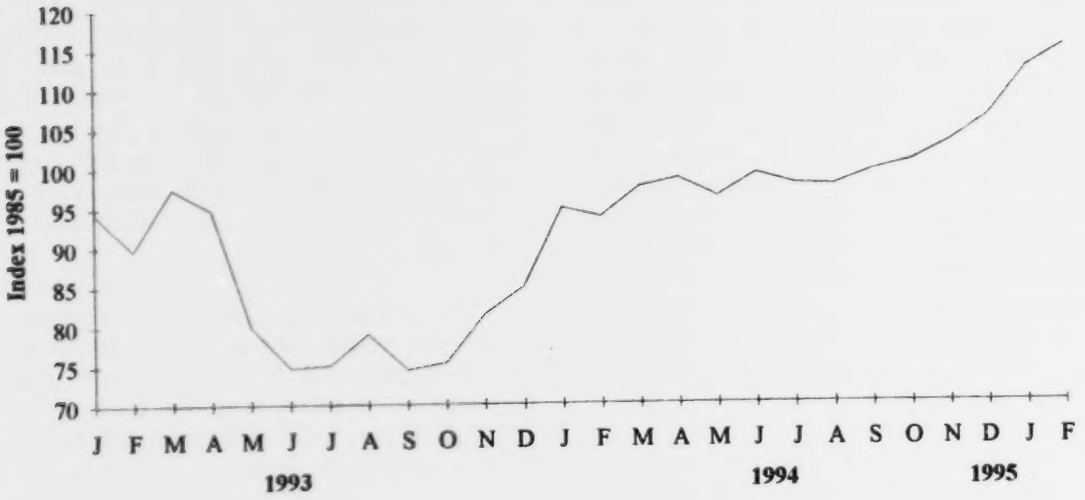
Table 8
Removals of coniferous logs in selected countries, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
REMOVALS						
EUROPE :	117887	113740	118352	133236	14884	12.6
of which :						
Sweden a/	22400	24300	25400	28500	3100	12.2
Finland	13470	15241	17469	21411	3942	22.6
Germany	14170	13565	14753	18009	3256	22.1
France	13127	12400	11662	13410	1748	15.0
Austria	9469	6265	6363	7953	1590	25.0
Poland	6514	7519	7424	7629	205	2.8
former Czechoslovakia	5987	5377	5429	6618	1189	21.9
Spain	4784	4334	4543	...	...	...
Norway	5680	4412	4764	4282	-482	-10.1
Portugal	3730	3591	3521	...	...	...
United Kingdom	3087	3135	3247	3495	248	7.6
Turkey	2654	2752	2742	2541	-201	-7.3
Switzerland	2634	2520	2495	...	...	...
Other countries	10181	8329	8540	8829	289	3.4

a/ Felling year.

Graph 4

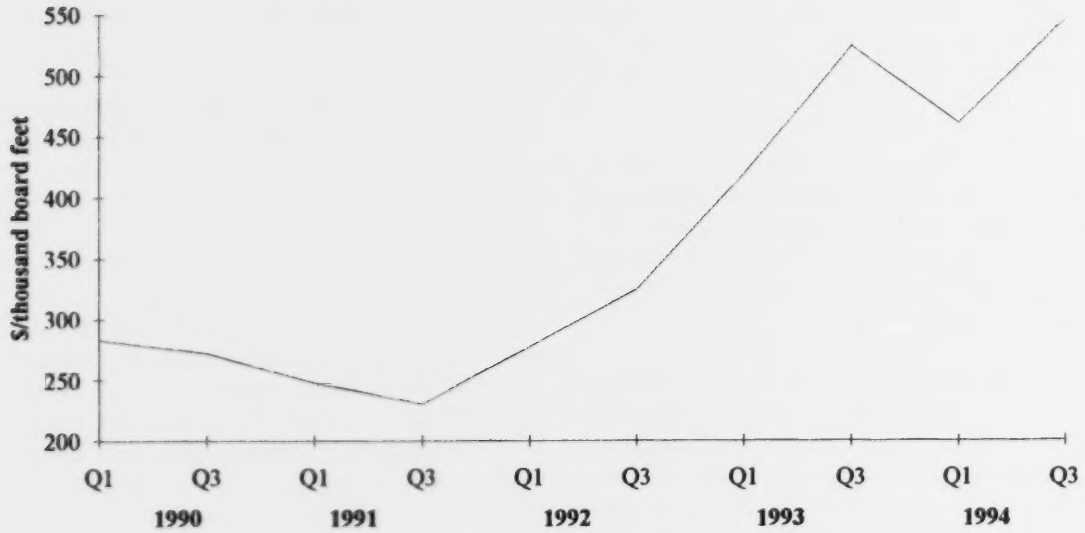
Producer price indices for spruce logs from public forests in Germany, 1993 to 1994



Source: *Preise und Preisindizes für die Land- und Forstwirtschaft*, Statistisches, Bundesamt, June 1995

Graph 5

United States non-coniferous log prices, 1990 to 1994



(prices paid for red oak, grade 1 logs, delivered to sawmills, Doyle log scale).

Source: Ohio Division of Forestry, *Ohio Timber Prices*, 1995

competition for logs; and lower log quality from private lands which is often unsuitable for the Japanese market. Political and judicial processes are still under way and the final results with regard to the sustainable level of harvest in the PNW are not yet clear.

Harvest restrictions, high costs and an ageing industrial infrastructure are causing the centre of gravity of the United States forest products sector to shift from the PNW, characterized by old growth, mountainous, publicly-owned forests producing very large logs, to the South, where the forest is mostly privately-owned, on flat (sometimes swamp) ground and is mostly the product of second growth or natural extension onto the former agricultural land (cotton). In the South, growth rates are high, and labour costs low, although problems have arisen in mobilizing wood supply from thousands of private forest owners. This shift has caused prices of southern yellow pine logs to rise markedly in recent years.

In the southern United States, pulpwood prices have doubled from around $30/cord to $60/cord (3.6 m^3) in 8 months since May 1994. This has had some negative effects for the sawmill sector: one of the largest forest products companies closed 8 southern yellow pine sawmills due to high log prices and cut the average 40-hour workweek at 13 other mills by 20%. Causes for the Southeast's booming roundwood market were: a dramatic, unexpectedly rapid recovery in the pulp and paper industry; a 13% rise in United States homebuilding in 1994; a shifting industry base from the PNW due to environmental restrictions on timber harvests. Overall prices for private stumpage are up approximately 30% from 2 years ago.

The United States Animal and Plant Health Inspection Service (APHIS) proposed new fumigating and heat-treating rules for imports of green, i.e., unseasoned, logs, sawnwood and other wood products after discovering insects and fungi on logs originating in Russia.

The forest industry in the province of British Columbia (BC) in Canada is also undergoing tumultuous changes. BC is Canada's major exporter of forest products with approximately 40% of the world's coniferous sawnwood exports, and the Provincial Government is revising harvest levels under the new forest practices code. Recently, according to the Council of Forest Industries Canada (COFI), in 1993, 81 million m^3 of timber was harvested from both public and private lands. This compares to a proposed 60 million m^3 annual allowable cut in 1995. Regardless of whether the industry or government estimations are used, the result is a decrease in the availability of raw material with corresponding price implications.

The strong demand in 1994 for both sawnwood and pulp chips, combined with structural constraints on the supply side, have caused an acute fibre shortage in BC. The structural constraints include government policy responding to environmental pressure, and land claims by indigenous peoples. Legislated harvesting reductions were proposed to protect riparian areas, fish and wildlife habitat and biodiversity.

Due to shrinking availability, BC companies sought new supply sources. Some BC pulpmills purchased pulpwood from Alaska and imported bargeloads of Alaskan chips, some of which cost 20% more than in BC. Sawmills imported logs from Alberta and as far away as Sasketchewan and Manitoba, despite trans-Rocky Mountain transportation costs. These alternative sources were less expensive because of a BC stumpage price increase from C$5 to C$45/metric tonne over the last 2 years, plus a 50% stumpage rate increase during the last year. In 1994, approximately 2 million m^3 of logs flowed from Alberta to BC mills and some BC interior mills became dependent for one-third of their raw material from Alberta. This sudden change in trade led to a debate and some Alberta municipalities attempted to regulate harvests from private forest lands.

On the other side of Canada, New Brunswick's timber harvests are increasing as the results of former planting programmes reach harvestable size.

(iv) European trade of wood in the rough

Europe's trade deficit in industrial wood in the rough continued to increase in 1994 - to 19.6 million m^3 (table 9). European *exports* turned up by 10.1% to 17.8 million m^3 as intra-European trade, especially of round pulpwood, increased and some additional sawlogs were shipped to the new market in Japan. Of this total, coniferous advanced by 11.6% to 12.6 million m^3 after falling for 2 years, while non-coniferous advanced by less, 6.6% to 5.2 million m^3.

Table 9
Exports and imports of industrial wood in the rough, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994 Volume	Change 1993 to 1994 Percent
			(1000 m3)			(%)
EXPORTS						
EUROPE :						
- Coniferous	15555	12515	11288	12603	1315	11.6
- Broadleaved	8145	6973	4856	5178	322	6.6
TOTAL :	23700	19488	16144	17781	1637	10.1
of which :						
Germany	8262	6035	4403	4492	89	2.0
former Czechoslovakia	890	270	1167	1933	766	65.6
France	4775	3146	1669	...	...	...
Finland	199	480	912	1515	603	66.1
Belgium-Luxembourg	1509	1252	1252	...	...	...
Switzerland	1166	1107	1055	1053	-2	-0.2
Sweden	807	640	833	1013	180	21.6
Poland	892	1356	905	...	...	...
Portugal	452	638	638	...	...	...
Austria	816	486	551	631	80	14.5
former Yugoslavia	15	786	644	619	-25	-3.9
Hungary	896	988	512	451	-61	-11.9
Other countries	3021	2304	1603	1610	7	0.4
former USSR	10624	11400	16183	15783	-400	-2.5
Canada	1356	2103	1175	1162	-13	-1.1
United States	20700	17276	13030	12156	-874	-6.7
North America	22056	19379	14205	13318	-887	-6.2
IMPORTS						
EUROPE :						
- Coniferous	19554	16217	15750	18602	2852	18.1
- Broadleaved	16181	17274	15637	18771	3134	20.0
TOTAL :	35735	33491	31387	37373	5986	19.1
of which :						
Finland	4253	5942	5418	6723	1305	24.1
Sweden	4704	4787	4273	6660	2387	55.9
Italy	6351	5425	4670	6068	1398	29.9
Austria	6155	4700	4483	4828	345	7.7
Norway	1075	1249	1151	2617	1466	127.4
Belgium-Luxembourg	2497	2314	2314	...	...	...
Germany	1575	1679	1126	1473	347	30.8
Turkey	989	1005	2344	1206	-1138	-48.5
Spain	2201	2203	1281	1086	-195	-15.2
France	1837	1303	976	...	...	...
Portugal	590	636	636	...	...	...
Netherlands	707	628	541	497	-44	-8.1
Other countries	2801	1620	2174	2289	115	5.3
Canada	2281	5123	4427	4980	553	12.5
United States	218	273	458	533	75	16.4
North America	2499	5396	4885	5513	628	12.9
Japan	25372	25376	22625	...	...	...

It should be noted that due to the changes in the Custom Cooperation Council's Harmonized System of trade classification, which came into effect in 1993, there has been a loss of distinction between trade of sawlogs, pulpwood and other roundwood. They have been grouped into "industrial wood in the rough" which explains the title of the table. Concurrently the partial elimination of border checking and recording within the European Union has also completely upset the collection and reporting of intra-EU trade. Thus, the resulting table occasionally contains the best estimations of the reporting countries.

Europe's major exporter of industrial wood in the rough, Germany, increased roundwood removals (mostly coniferous) by 11.6% in 1994, but the resulting export of 4.5 million m^3 of wood in the rough was down 45.6% from the volume exported in 1991, 8.3 million m^3, due to the January 1991 storm-felled timber. German log exporters have found the Japanese market too, but the Japanese report that constant supply is not yet established and an earlier price advantage has been negated in mid-1995 as Russian log prices fell. Austria exported 14.1% more coniferous wood in the rough to markets such as Italy with small amounts going to Japan. The Czech Republic increased exports of logs by 34.1%, most of which went to Austria (some of these continued to Japan). Finland's exports again took a leap, rising over the past 3 years by 98% in 1993 and by 66.6% to reach 1.5 million m^3 in 1994; much of this is shipped to Sweden where the technology exists to debark and pulp very small diameter stems and some went to Japan.

However, European *imports* of industrial wood increased faster than exports, by 18.1% for coniferous and 20.0% for non-coniferous. Coniferous industrial wood imports increased throughout Scandinavia: Sweden, up 49.8% to 3.6 million m^3; Finland, up 75.0% to 1.9 million m^3; Norway, up 130.3% to 1.9 million m^3; and Denmark, up 309.1% to 0.2 million m^3. Non-coniferous, much of which went for pulp, increased in 1994 in Sweden by 63.7% to 3.0 million m^3 and Norway, by 53.9% to 0.7 million m^3. Finland, the ECE region's largest importer of non-coniferous industrial wood in the rough, increased removals by 11.1% to 4.8 million m^3. The Italian recovery in 1994 increased demand for industrial wood, and non-coniferous log imports rose by 74.4% to 3.9 million m^3 while coniferous log imports fell by 5.0% from 1993 to 2.5 million m^3. Austria imported 7.7% more logs and pulpwood in 1994, of which 83.6% was coniferous. In general, coniferous industrial wood imports by countries in transition were down, with the exception of Slovenia which increased imports to 0.1 million m^3 from a relatively low base.

Europe continued in 1994 to import tropical non-coniferous industrial wood in the rough but the volumes of saw and veneer logs were declining while the pulpwood volumes, especially eucalyptus, were increasing.

In Poland, an interesting phenomenon occurred in 1995 when the government raised the stumpage prices (most forest land is State-owned) to increase revenue. The result was that sawmillers began importing logs from as far away as France because they were more economical than domestic timber.

(v) North American trade of wood in the rough

North American *exports* of industrial wood in the rough fell in both Canada and the United States, by 1.1% and 6.7% respectively as harvesting restrictions raised concerns for supply and domestic demand increased.

In the United States in 1994, exports of coniferous industrial wood (sawlogs, pulpwood and other industrial wood) fell by 8.3% to 11.0 million m^3 due to the strong domestic demand. Sawlog and veneer log exports to Japan fell by 4.3% in 1994 to 7.3 million m^3 according to Japan Wood Products Information and Research Center, as reported by *Random Lengths Export*. Non-coniferous exports of sawlogs and pulpwood moved up 11.3% in 1994 to 1.2 million m^3. The American Hardwood Export Council forecasts that log exports will gradually phase out, as importers reduce shipping costs by buying sawnwood and pre-defected furniture dimension stock.

United States *imports* in 1994 of coniferous industrial wood in the rough increased to a relatively small 0.4 million m^3, up 10.1% from 1993. Non-coniferous industrial wood in the rough imports also increased, by 51.4% in 1994 to 0.1 million m^3.

Canadian coniferous industrial wood *exports* fell 18.4% to 0.9 million m^3; *imports* simultaneously increased by 9.6% to 3.8 million m^3. Sawlog and veneer log exports to Japan fell sharply, by 39.1% to 0.3 million m^3 as domestic markets prevailed.

Non-coniferous industrial roundwood exports increased from a low base by 141.7% to 0.3 million m^3 in 1994 while imports increased by 1.0% to 1.2 million m^3.

B. Coniferous sawnwood

(i) Coniferous sawnwood consumption

The *apparent domestic consumption* of coniferous sawnwood in *Europe* in 1994 leaped by 10.6% over 1993 levels after three years of decline (table 10 and graph 6). Consumption was 76.6 million m^3, 7.4% more than in 1993 but was not yet back to the recent high of 1990. Much of this increase was due to recovery from recession and the strength in housing construction in many western European countries, as noted in Chapter II. Notable were the increases from 1993 in domestic consumption in Germany, up 15.3% to 16.0 million m^3, and the United Kingdom, up 21.3% to 10.1 million m^3.

In *central and eastern Europe*, in particular Hungary, Poland and Slovakia, consumption also rose as progress was made in the transition to market economies. The increased domestic demand for housing and wood products, coupled with the drive to earn hard currency from exports, led to production and trade improvements. This trend was not universal, as other countries in transition - the Czech Republic, Croatia and Slovenia - decreased consumption of coniferous sawnwood. Unfortunately, statistics from all countries in transition are incomplete. In sawnwood and several other sectors, Turkey did not follow its previously positive trends: the boom economy of 1993 crashed in 1994; apparent coniferous sawnwood consumption fell 29.0% due essentially to a 23.4% drop in production.

In *North America*, apparent domestic consumption increased 2.2% to 126.9 million m^3 as United States housing starts reached a recent record. Canadian sawnwood accounted for approximately one-third of the United States coniferous sawnwood consumption. Canadian housing starts, however, continued their decline from 1992, down by 6.6% in 1993 and by 1.9% in 1994 to 153,000. Thus with decreased domestic demand, Canadian consumption rose only slightly, by 0.6%.

Apparent domestic consumption continued to decline in the *Russian Federation*, by 38.3% in 1994 from 1993. The fall in consumption from 1992 to 1994 has been 56.7%. There are many reasons for the continued decline, for example, lack of infrastructure, lack of investment capital, increased unemployment and domestic market decline, and it is not possible to speculate whether this trend will continue, or if so, how far the decline could reach. Some optimism was expressed at the October 1994 Timber Committee Session where Russian production, exports and hence consumption were forecast to improve in 1995.

Since the establishment of the CIS, statistics have not been available for former USSR countries with the exception of the Baltic states. This situation applies not only to coniferous sawnwood, but to all products. Even in the Baltics, the most recent statistics received do not permit confirmation of Timber Committee forecasts of improvements in consumption in 1994. The official Latvian 1994 coniferous sawnwood production figure of 0.75 million m^3 comes from former and current state-owned sawmills records, but actual production is estimated to be closer to 1.1 million m^3 by the State Forest Service. Using the higher value, the apparent consumption would have risen by 3.0% in 1994, to 0.28 million m^3.

(ii) Coniferous sawnwood production

Production of coniferous sawnwood in *Europe* increased by 8.4% in 1994 over 1993 to 73.4 million m^3, nearly to the level of 1990 (table 11). Large increases came from countries with strong domestic consumption, e.g., Germany, which produced 2 million m^3 more than in 1993, thus up 19.4% to a record production level of 12.4 million m^3. Sawnwood production in the new *Länder* of Germany increased by 45.6% for coniferous and 25.6% for non-coniferous through November of 1994 over the same period in 1993.

By mid-1995, however, it was no longer universally market demand pulling production but in some areas production momentum carried coniferous sawnwood into an oversupply situation, e.g., Scandinavia and North America. The resulting decrease in sales and fall in prices did not immediately deter those sawmills which found their chip by-products in high demand by pulp manufacturers.

Table 10
Coniferous sawnwood balance in Europe, the former USSR and North America, 1990 to 1994
(million m^3)

	1990	1991	1992	1993	1994 (prelim.)	Timber Committee estimates a/	
						for 1994	for 1995
EUROPE							
Production	73.77	67.39	66.66	67.75	73.44	71.29	73.71
Imports	29.95	26.41	27.57	27.22	32.02	28.60	29.17
Exports	19.71	20.26	22.58	25.74	28.86	28.18	29.17
Net trade b/	-10.24	-6.15	-4.99	-1.48	-3.16	-0.42	-
Apparent consumption	84.01	73.54	71.65	69.23	76.60	71.71	73.71
former USSR							
Production	92.00	66.30	45.48	35.04	25.06	26.46	32.49
Imports	0.10	0.10	0.02	0.02	0.02	0.02	0.02
Exports	6.20	4.75	6.32	7.15	7.54	6.24	9.25
Net trade b/	6.10	4.65	6.30	7.13	7.52	6.22	9.23
Apparent consumption	85.90	61.65	39.18	27.91	17.54	20.24	23.26
NORTH AMERICA							
Production	138.24	129.30	136.99	136.39	137.88	142.15	139.35
Imports	29.67	28.06	31.88	36.17	38.84	39.72	39.02
Exports	44.48	43.71	45.52	48.35	49.80	49.37	48.27
Net trade b/	14.81	15.65	13.64	12.18	10.96	9.65	9.25
Apparent consumption	123.43	113.65	123.35	124.21	126.92	132.50	130.10

a/ At October 1994 session. The Committee's estimates for 1994 and 1995 have been adjusted to make them comparable with the historical (actual) data for 1990-1994.
b/ + = net exports; - = net imports.

Graph 6
Consumption of coniferous sawnwood, 1964 to 1994

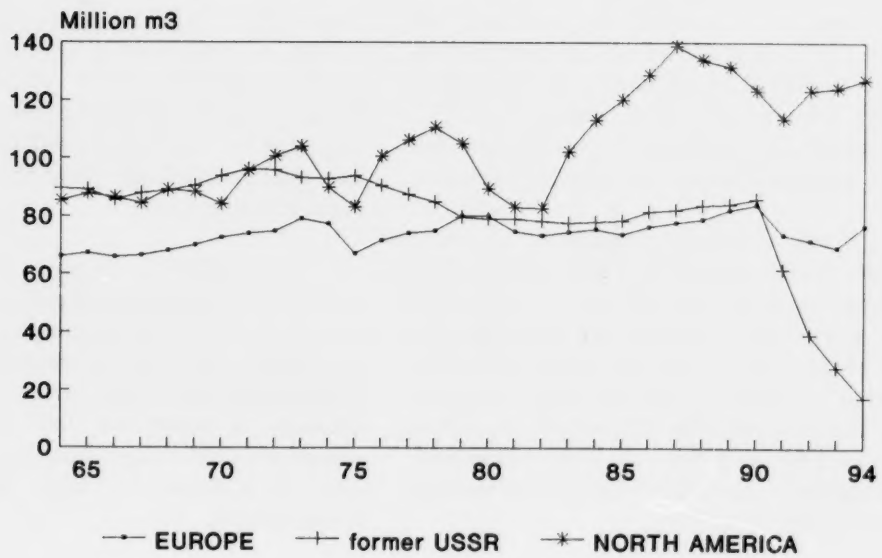


Table 11
Production of coniferous sawnwood, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
EUROPE	67386	66659	67752	73439	5687	8.4
of which :						
Main exporting countries	43520	45687	46849	52417	5568	11.9
Sweden	11237	11915	12538	13616	1078	8.6
Germany	11599	11866	10358	12365	2007	19.4
Finland	5900	6900	8305	9700	1395	16.8
Austria	6904	6701	6539	7206	667	10.2
Poland	2593	3555	3694	3900	206	5.6
former Czechoslovakia	3037	2400	3115	3230	115	3.7
Norway	2250	2350	2300	2400	100	4.3
Other countries	23866	20972	20903	21022	119	0.6
of which :						
France	6767	6500	6166	7012	846	13.7
Turkey	3330	3300	3179	2434	-745	-23.4
Spain	2559	1686	2159	...	...	...
United Kingdom	1893	1916	1950	2050	100	5.1
Portugal	1300	1350	1300	...	...	...
Switzerland	1542	1400	1300	1200	-100	-7.7
Belgium-Luxembourg	960	900	900	...	...	...
former USSR	66300	45476	35036	25058	-9978	-28.5
Canada	51037	55512	58651	60648	1997	3.4
United States	78260	81481	77736	77231	-505	-0.6
North America	129297	136993	136387	137879	1492	1.1

Capitalizing on previously expanded capacity, improved export markets and devalued currencies, *Sweden and Finland* increased production in 1994 by 8.6% to 13.6 million m^3 and by 16.8% to 9.7 million m^3 respectively; in the case of Sweden, production exceeded their previous highest level of 13.4 million m^3 in 1973. Despite dramatic increases in production and profits, sawmillers in these countries were said to be covering previous years' losses brought on by heavy capital expenditures before the recent economic recession. In the first quarter of 1995, production in Sweden and Finland was up 19 and 16% respectively from the same quarter in 1994.

Other countries in Europe had record high production levels in 1994: Austria, 7.2 million m^3, up 10.2%; France, 7.0 million m^3, up 13.7%; and the United Kingdom, 2.1 million, up 5.1%. As opposed to Sweden and Finland, these countries saw improvements in domestic consumption as well as export markets.

In *central and eastern Europe* in 1994, increases in production levels of coniferous sawnwood were reported in Poland, Czech Republic, Slovak Republic, Slovenia, while decreases were registered in Croatia and Hungary. These changes in production levels can be linked to the economic conditions described in Chapter II.

Russian Federation production fell by nearly 10 millions m^3, 31.7% to 22.4 million m^3 as the transition process continued to negatively effect industrial outputs. At the October 1994 Timber Committee Session, production in 1995 was forecast to improve by over 25%. However, based on sawnwood production statistics for January and February 1995, down 16% from the same 2 months in 1994, the forecast may have been optimistic.

North American coniferous sawnwood production in 1994 rose slightly by 1.1%; of that, Canada was responsible for producing 60.6 million m^3, 3.4% more than in 1993, but the United States produced 0.6 percent less, or 77.2 million m^3. While Canadian mills ran near capacity in order to supply the United States and overseas sawnwood demands, United States mills produced primarily for the domestic housing market. Production in 1995 in North America was forecast by the Timber Committee in 1994 to decrease slightly as tightened monetary policy in the United States resulted in increases in home mortgage rates. Competition for offshore markets has also increased. Oversupply in North American construction-grade coniferous sawnwood was blamed for decreasing sawnwood prices which hit a 2-year low in mid-1995.

In 1995, some United States southern yellow pine (SYP) producers have curtailed production and some are running at less than full capacity as low sawnwood prices combined with high log prices kept margins low. SYP log costs have escalated as sawmills, panel plants and pulp mills compete for the available log supplies.

The surplus of sawnwood in 1995 was not limited to North America, but existed in Europe as well, in some species and quality levels. Lower quality whitewood (spruce and fir) and redwood (pine) supplies were higher than demand and prices fell.

There were two reasons for the oversupply in 1995. First, sawmillers profited from the increased demand and increased sales prices of sawnwood in 1994 and ran mills at near capacity. But as demand levelled off in 1995, and stocks were built first, by the importers and then, by the sawmills, the production rates did not come down and producers were forced to lower prices in order to try to sell their sawnwood. Second, as pulp prices rose to record levels, the value of sawmill residues became equivalent to or even greater than the value of low-grade sawnwood. Many sawmills that are integrated with pulp companies maintained high production levels simply to generate by-products to be used as pulp furnish. In fact, some west coast Canadian sawmills were said to offset losses from sawnwood production with profits from the sales of residuals.

(iii) Coniferous sawnwood trade

In 1994, *trade of coniferous sawnwood* increased in the ECE region overall, but the sub-regions show diverging results over 1993 (table 12). *European exports* increased by 12.1% in 1994 to 28.9 million m^3 based upon the strength of intra-European trade, plus developing overseas markets.

Strong export increases in 1994 were reported by Finland and Sweden, up respectively by 15.7% to 7.2 million m^3 and by 5.8% to 10.6 million m^3; these two countries make up 61.3% of the European total. Sweden exported sawnwood to the United Kingdom, 2.7 million m^3; Germany, 1.8 million m^3;

Table 12
Exports and imports of coniferous sawnwood, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994 Volume	Change 1993 to 1994 Percent
			(1000 m3)			(%)
EXPORTS						
EUROPE	20256	22576	25740	28856	3116	12.1
of which :						
Sweden	6931	8240	10040	10620	580	5.8
Finland	4276	4268	6188	7159	971	15.7
Austria	3962	3871	3850	4457	607	15.8
Germany	960	945	953	1446	493	51.7
former Czechoslovakia	981	700	860	1185	325	37.8
Poland	275	486	898	...	...	...
Norway	643	809	870	776	-94	-10.8
Portugal	762	1079	450	...	...	...
France	319	346	366	391	25	6.8
former Yugoslavia	80	482	283	295	12	4.2
Other countries	1068	1350	982	1179	197	20.1
former USSR	4750	6319	7151	7535	384	5.4
Canada	36500	39352	42945	44892	1947	4.5
United States	7210	6166	5407	4903	-504	-9.3
North America	43710	45518	48352	49795	1443	3.0
IMPORTS						
EUROPE	26406	27571	27223	32019	4796	18
of which :						
United Kingdom	6604	6899	6421	8173	1752	27
Germany	4100	4458	4487	5102	615	14
Italy	4436	4402	4326	4827	501	12
Netherlands	2412	2436	2779	3040	261	9
Denmark	1432	1660	1682	2278	596	35
France	1757	1401	1397	1608	211	15
Belgium-Luxembourg	1195	1252	1079	...	...	...
Spain	1085	1217	970	1035	65	7
Austria	576	629	677	834	157	23
Norway	391	411	487	729	242	50
Hungary	410	566	586	712	126	22
Other countries	2009	2239	2332	2602	270	12
Canada	880	757	645	691	46	7.1
United States	27175	31127	35529	38150	2621	7.4
North America	29668	28055	31955	36430	4475	14.0
Japan	7792	7710	8835	...	...	...

and Denmark, 1.3 million m^3. Approximately 11.9%, or 1.3 million m^3 was sold outside the EU. Finnish sales outside the EU were 18.1% of total exports or also 1.3 million m^3. The fall in value of the Swedish krona led some importers in the United Kingdom to change sources to Sweden from Canada where the currency appreciated. Sweden, Finland, Austria and Germany shipped logs and sawnwood in increasing quantities to Japan in 1994 and early 1995; at one point the European exports were more affordable than Russian timber, but prices from Russia have since fallen.

German exports were up 51.7% to 1.5 million m^3 despite a strong currency. Austrian exports, like those of Germany, Finland and Sweden were at record levels, up 15.8% to 4.5 million m^3. By mid-1995, German coniferous mills were reported by the *Timber Trade Journal* to be quiet and priced out of United Kingdom and some other markets by lower cost Russian, Baltic and other producers. Austrian sawnmills were said to be suffering from higher log prices and the fall in the Italian lira, the currency of their principal export market.

Central and eastern European countries exports showed no consistent trend with some of those reporting showing increases: Estonia, 171.3%, Latvia, 159.9%, and Slovenia, 4.7%. The Baltic States have successfully advanced their exports to western Europe over the past few years although occasionally exporters struggle to meet quality requirements; the affordability of Baltic timber has been one of its main attributes.

In *North America* the exports of coniferous sawnwood increased by 3.0% to 49.8 million m^3, the majority originating from Canada. Canadian exports increased 4.5% to a record 44.9 million m^3 in response to strong United States demand. This displaced the European markets, particularly the United Kingdom which established phytosanitary standards in 1994 and instituted kiln drying requirements for some construction timber in 1995. With continually increasing domestic demand, United States exports dropped again for the third consecutive year as production fell partially due to stumpage availability.

Exports from the *Russian Federation* (all destinations, including CIS) fell 5.0% in 1994 to 6.1 million m^3 from 1993. However, revised figures show that there was a slight improvement in 1993 over 1992 by 8.3% to 6.5 million m^3. Numerous reasons exist for the slide, including increasing difficulties in the economic transition, reduced production of sawnwood and tightening export regulations. Despite the drop in volume, *Random Lengths Export* reported that the value of Russian exports increased over 1993 by 76% to $22.2 million in 1994. It appears that Russian exports, excluding those to CIS countries, actually increased by 17.4%

To elaborate on the current situation in the Russian Federation timber trade, the *Timber Trade Journal* states that the Russian government made Roslesprom, into the State timber industry company. Although a government agency, it must operate as a commercial enterprise in a free market rather than by state command. Roslesprom and the government have attempted to reduce the number of "non-specialist exporters" to stem the flow of unofficial exports. In 1994 the number of "special" exporters dropped from 400 to 217, with a goal of 50. Roslesprom "performs the functions of management of the forest and forest industries complex at a federal level" with the main objective to shape and carry out the state policy aimed at preservation and effective use of production and scientific potential of forest industrial complex.

European imports in 1994 advanced strongly, by 17.6% over 1993 to 32.0 million m^3, a record level above the previous high in 1973. Many countries exceeded their October 1994 Timber Committee estimates, which is why Europe remains a net importer of coniferous sawnwood and not a net exporter, as forecast at the Committee session. Drawn by the domestic demand for housing, the United Kingdom and Germany imported more sawnwood in 1994, 27.3% and 13.7% respectively. Europe's third largest importer, Italy, overcame depressed markets and had record levels of coniferous sawnwood imports in 1994, as did the Netherlands and Denmark.

North American imports of coniferous sawnwood in 1994 moved up as the United States imported 7.4% more, 38.2 million m^3; this high level was obviously driven by decreased domestic production and increased domestic demand for building construction.

The Timber Committee predicted a slight increase in imports of coniferous sawnwood in Europe in 1995, but with the slowing of the United Kingdom economy and related housing demand for Europe's largest importer, the same level as 1994

might be realistic. North American imports in 1995 were forecast to decrease as interest rates moved up and house construction slowed.

(iv) North American coniferous sawnwood developments

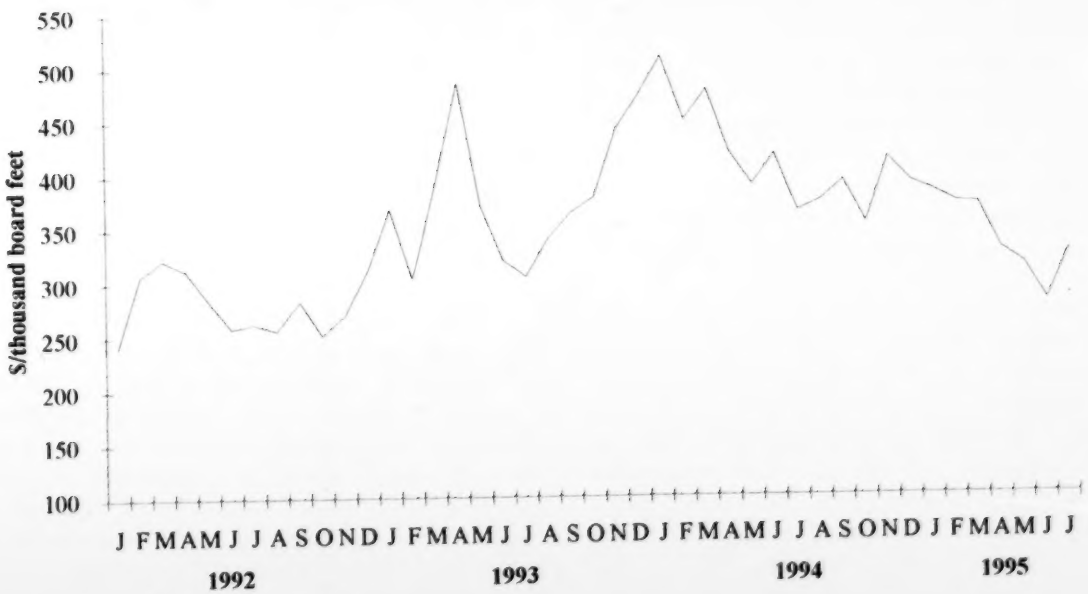
United States exports of coniferous sawnwood declined for the fifth consecutive year in 1994 as domestic markets were strong. And export volumes were forecast to slip again slightly in 1995 by the Timber Committee. These developments have had major international ramifications as former North American-dominated export markets in Europe and the Pacific Rim were opened to Scandinavian and eastern European exporters. According to *Random Lengths Export,* United States coniferous sawnwood exports to Japan were 9.8% less in 1994, to Europe 6.4% less, and to Mexico 21.1% less. West coast mills increased production in 1994 as logs became more available from private lands and were diverted from export because of the strong domestic market.

Canadian exports to the United Kingdom have decreased throughout the 1990s, partially due to requirement for heat-treating to destroy the pinewood nematode, higher prices in the United States market, and fierce price competition from Scandinavian suppliers. A new United Kingdom requirement for structural sawnwood to be graded and stamped kiln dried as of March 1995 may add 10% to 15% to the cost of sawnwood from eastern Canada, who upgraded mills and installed new kilns in many cases.

In mid-1995 the North American sawnwood markets were volatile and the bellwether 2x4 construction stud hit a two-year price low at $180/mbf (equivalent to $76/m^3), FOB mill, nominal measure basis. This was due to the soft United States and Canadian housing markets and over-production in anticipation of renewed strength in the seasonally strong June and July construction season. Thus, over the last 18 months, the price of 2x4s has lost $270/mbf or 60.0%. Prices for spruce-pine-fir dimension lumber for export to Japan were also weak at $220/m^3. The trend of higher prices for higher grade continues as they are more and more in short supply. For all coniferous sawnwood quality levels together, the prices fell from their January 1994 peak (graph 7). The United States prices for coniferous sawnwood have now nearly returned to the levels of early 1992, which were half the peaks in 1993 and 1994. There are signs that the high and volatile prices of coniferous sawnwood in 1993 and 1994 are having negative effects on markets. According to the trade press, the recent upturn in North American sawnwood prices has forestalled some proposed reduction in production.

Graph 7

North American composite coniferous sawnwood prices, 1992 to 1995



Source: *Random Lengths Export*

In the United States, steel stud use is increasing as a substitute for 2x4s: in 1992, 500 new houses had steel studs; in 1993, 13,000 houses; and in 1994, 35,000 houses. The target of the steel industry is 70,000 new houses in 1995. Contributing to the switch is the perceived declining quality in construction lumber by contractors. The doubling of steel stud use in 1995 may not be achieved with the above mentioned decline in wood stud prices.

The changing sources of coniferous sawnwood for United States consumption as forecast by WWPA (Western Wood Products Association) are shown below based on WWPA's estimation of construction of 1.38 million houses in 1995, down by 5.5% from 1994 :

	1994 %	1995 %
United States West	34	33
United States south	30	30
Other United States	2	2
Canada	33	34
Other import	1	1
Total	100	100

Canada's increasing share of the United States sawnwood market, from 27% in 1992 to 33% in 1994, coincided with an August 1994 ruling by the "extraordinary challenge panel" which was to have concluded the 12-year battle over alleged Canadian coniferous sawnwood subsidies. The United States lost its appeal and had to refund approximately $575 million in duties it had kept in escrow since imposing a 6.5% tariff on Canadian imports to make up for a subsidy that Canada allegedly provides its industry. But by mid-1995 with a decline in sawnwood prices, some United States interests reportedly would like to see the duty revived; a consultative process between the two countries on forest economics and management was established to re-study the situation.

Canadian sawnwood exports have been boosted by the drop in the value of the Canadian dollar, which has fallen by 20% since the fourth quarter of 1991 against the United States dollar. Improved conversion efficiency allows upgrading of what was formerly pulpwood into sawlogs which can produce two 2x4s as well as pulp chips. The sawmill sector in March 1994 saw sawnwood prices higher than historic levels, pulp chip revenue more than double in the last year and a windfall revenue from the return of the sequestered contervailing duties from the United States.

However, in 1995, Canadian lumber prices have dropped as supplies increased and demand weakened as both Canadian and United States housing sales fell. In mid-1995, BC lumber prices were so low that some sawmills might have closed if booming markets for residual chips had not kept them solvent. Additional competition for this pulpwood-sized wood fibre is coming from the OSB industry.

The 1995 slide in the value of the United States dollar in comparison to other currencies has given Canadian and United States sawmillers a price advantage in most markets, especially Japan where the United States dollar has lost almost 20% to the yen during the last 12 months (June 1994 to June 1995). The dollar's fall in spring 1995 has not helped regain lost the market share in Europe as the fall in timber prices for Scandinavian whitewood and lower-priced timber from eastern Europe and the ex-USSR has pressured prices lower. Table 13 shows the dramatic effect of the dollar's devaluation compared to other currencies for some commonly traded products in prices per thousand board feet (2.36 m^3).

(v) European coniferous sawnwood developments

European forest products markets experienced some of the same effects as North America since they compete in the same international marketplace. Some Scandinavian and Baltic countries, e.g., Sweden, Finland, Estonia and Latvia, export about 75% or more of their production of coniferous sawnwood. Strong sawnwood demand from new construction and the repair and renovation sector drove 1994 European apparent domestic consumption up by 10.6% over 1993. Production rose 8.4% and trade escalated by 12.1% for exports and by 17.6% for imports.

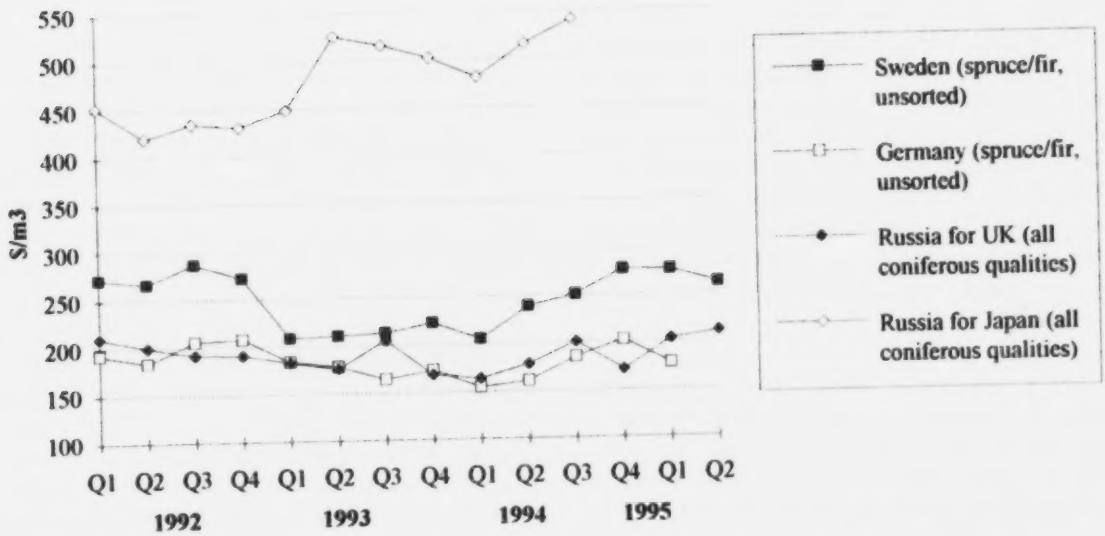
As in North America, the demand for wood fibre came not only from sawmills, but also from pulp mills which ran at capacity to meet the demand, generated by coming out of recession, for paper and paperboard. Competition for wood fibre also came from the panel sector as traditional products, plywood, fibreboard and particle board, came out of a three year slump, and MDF rose to new heights of production. The interactions of these rising demands for wood stimulated sawmills to increase production

Table 13
Prices of United States exports of coniferous sawnwood to overseas markets

	Currency	Price (June 1994)	Price (June 1995)	% change
Japan				
Hemlock squares	$	815	915	+12.3
(4 1/8 x 4 1/8 inches)	Yen	83,516	77,510	-7.2
Italy				
Douglas fir sawnwood	$	2000	1,950	-2.5
(3x6 inches and wider)	Lira	3,184,440	3,200,925	+0.5
United Kingdom	$	498	460	-7.6
SYP underlayment	£	326	289	-11.3
Spain				
SYP export prime	$	860	950	+10.5
(2-inch thickness)	Peseta	115,438	115,976	+0.4
United Kingdom	Canadian			
SPF Merchantable	dollar	730	665	-8.9
(3-inch thickness)	£	352	302	-14.2

Source: *Random Lengths Exports*

Graph 8
Prices of coniferous sawnwood, 1992 to 1995



Sources: *Holz Journal*, ZMP, No.13, March 1995; *Allmän Manadsstatistik*, Statistika Centralbyran, June 1995; *Overseas Trade Statistics of the United Kingdom*, 1995; *Monthly Statistics of Agriculture Forestry and Fisheries*, Japan, 1995.

in 1994, and subsequently to continue to produce at the elevated levels in 1995, despite falling demand. The overproduction of sawnwood, in part driven by the demand for residues to produce pulp and panels, led to a fall in prices in 1995.

Swedish and *Finnish* export market opportunities benefited from a decline in Canadian and Russian exports into Europe. This market opening also was seized by other exporters such as Austria, Germany, the Baltic States and some central European countries. Sweden also felt an increased demand from Norway which increased imports as the economy improved and the Olympics were staged. These two Nordic exporters were not unhurt by earlier devaluations in the krona and markka which made them more price competitive both within and outside Europe.

Sweden's exports to Japan have increased from 700 m^3 to 250,000 m^3 over the past 2 years. The Swedish sawnwood exporters are considering the United States market as well and have taken some preliminary steps toward meeting the required grading and size requirements. In 1994, Sweden and Finland continued to build links with the Baltic Countries, especially Latvia and Estonia.

Sawnwood prices generally rose in 1994, but by mid-1995, lower quality whitewood (spruce and fir) and redwood (pine) supplies were higher than demand, and prices were being pressured downwards for Scandinavian timber (graph 8). As a consequence of the declining Swedish prices, the Russian export company Roslesprom circulated a new price list in May 1995 offering lower whitewood prices. Redwood prices in Sweden, Finland and Russia reportedly stayed high, although the same decline could occur as United Kingdom and German consumption in May fell considerably. Stocks in the United Kingdom of green sawnwood from Sweden, Finland, Russia and the Baltic Countries rose in early 1995 to avoid the forthcoming kiln drying regulations.

As a result of falling sawnwood prices, sawmills in Scandinavia requested forest owners to reduce log prices. But with strong alternative markets for pulp, and recent profits from increased log sales at higher prices, log prices remained steady.

French coniferous sawnwood prices increased in 1994 by 4.3 to 20.8%, according to the assortment. By contrast, beech prices rose by 12.5 to 24.5% according to the quality. The majority of France's 15% increased imports came from Finland (590,072 m^3), Sweden (410,032 m^3), the CIS (186,902 m^3), Canada (35,884 m^3), and the United States (18,497 m^3). However, the French timber market was slow in the first half of 1995. Importers stopped forward buying of Scandinavian coniferous sawnwood and waited for improved demand, reduction of stocks and firming of the declining prices. At the end of February 1995, the imports of coniferous sawnwood were 231,955 m^3, compared to 256,100 last year at the end of February 1994, and prices were under downward pressure.

New United Kingdom timber import regulations for heat treating and kiln drying of timber, and the end of tropical plywood quotas had buyers uncertain and some trade interruptions occurred. The new kiln drying requirement for construction sawnwood could adversely affect trade in Baltic and Russian sawnwood which is imported largely unseasoned and generally lower in price. United Kingdom prices, as quoted from the *Market New Service*, ITO/ITTO, give an indication of price levels in mid-1995:

Swedish sawfalling: $217 fob
Swedish whitewood: $245 cif
Baltic carcassing: $209 cif
Baltic SS/GS graded: $234
Baltic unseasoned, ungraded, general sizes: $170-190
Russian good quality unsorted redwood:$321-337 cif.
Russian 4ths: $230-235 (equivalent to Swedish 5ths)
Swedish redwood 5ths: $265-280

Austrian exports to Italy increased by 10.5%, up to 2.8 million m^3, which was a primary reason that Austrian exports increased 15.9% in volume to 1.4 million m^3 and 25% in value to 9.5 billion schillings in 1994 over 1993. Although the Italian construction industry was not exceptionally strong in 1994, the repair/renovation/remodelling sector represented 50% of the turnover for the first time ever. Spurred by the decreased value of the lira (down 50% from 1992), Italian exports of furniture and fixtures improved, which created additional demand for packaging and pallet sawnwood. Despite continued political instability, the Italian trade has forecast continued improvement in 1995. Austrian exports to Germany and Switzerland improved by 37.6 and 33.5% respectively, but on relatively low volumes compared to Italian shipments as shown in the table below:

Austrian coniferous sawnwood exports
(1000 m^3)

	1993	1994	% change
Italy	2,460	2,753	11.9
Germany	423	582	37.6
Ex-Yugoslavia*	306	258	-13.5
Switzerland	112	149	33.5
Japan	9	95	936.0
Other overseas	413	436	5.8
Other Europe	79	134	69.6
Total	3,802	4,407	15.9

* Slovenia, Croatia, Bosnia-Herzegovina and the former Yugoslav Republic of Macedonia

Source: *Holzkurier*, March 1995

Germany also increased its trade in sawnwood with exports up 51.7% to 1.4 million m^3 and imports up 14% to 5.1 million m^3. While much of the exports went to European destinations, the United Kingdom, Italy, Netherlands, France, Belgium, Austria and some central and eastern European countries, substantial volumes were also exported to the near- and mid-East. Germany also started exporting sawnwood and logs to Japan (although this development must be endangered by the high rate of the Deutsche mark.)

C. Non-coniferous sawnwood

(i) Consumption

In 1994, *non-coniferous sawnwood consumption* remained stagnant in *Europe*. Apparent domestic consumption only fell by 0.1%, to 17.8 million m^3 after five consecutive years of decline. In total, European apparent consumption of non-coniferous sawnwood is almost 4 million m^3, 18% less than in 1990 (table 14 and graph 9). A turnaround in Italy's furniture exports, as well as domestic market strength, was responsible for its 7.4% increase in consumption. Many other countries in western Europe had lower consumption in 1994 than in 1993, but some central and eastern European countries reported an increase: Poland, up by 17.4%; Hungary, up by 9.3%; and the Slovak republic, up by 75.4%.

In 1994, *North American* non-coniferous sawnwood consumption continued to fall for the second year, by 4.8%. Trade improved but production was less in both Canada and the United States. North American consumption of non-coniferous sawnwood was lower than that of Europe for the second year. In 1994, Europe consumed roughly 1.3 million m^3 more of non-coniferous sawnwood than North America.

Consumption fell in the *Russian Federation* in 1994 by 32.4% over 1993, and 43.4% over 1992. These percentages are mirrored in production, and trade rests at low levels.

Possible reasons for these decreases in apparent consumption throughout the ECE region are the continued low demand for solid, non-coniferous furniture, flooring and cabinets and the substitution of composite products for solid wood. Substitution of non-coniferous railroad ties/sleepers by concrete is also eroding a valuable market for low-grade cants. Another possible factor, as increasing quantities of higher value-added products are produced and exported, e.g., furniture components, is a decrease in the reported imports of sawnwood. As countries only supply statistics on sawnwood proper, i.e., excluding value-added products, these further processed products could be distorting the apparent consumption.

(ii) Production

European production of non-coniferous sawnwood increased slightly in 1994, by 0.8%, the first improvement in the last decade (table 15). The record level was in 1979 at 19.8 million m^3, but by 1994 the production was down to 13.9 million m^3, a drop of 30% in 15 years. The continent's largest producer, France, overcame the momentum of 2 years of decline to estimate an increase of 6.7% in 1994 over 1993. In Turkey, Europe's second largest producer, production dropped by 17.4% in 1994, because of local macro-economic factors. If Turkish production had not dropped, the European total would have shown a 3% increase. Without a response from Romania, Europe's third largest producer, it is difficult to ascertain if the Timber Committee forecast for a production drop in 1994 came about.

Table 14
Non-coniferous sawnwood balance in Europe, the former USSR and North America, 1990 to 1994
(million m^3)

	1990	1991	1992	1993	1994 (prelim.)	Timber Committee estimates a/	
						for 1994	for 1995
EUROPE							
Production	17.72	16.65	14.03	13.81	13.91	14.21	14.55
Imports	6.85	6.39	7.19	6.46	6.73	6.41	6.60
Exports	2.86	2.85	3.08	2.50	2.89	2.63	2.74
Net trade b/	-3.99	-3.54	-4.11	-3.96	-3.84	-3.78	-3.85
Apparent consumption	21.71	20.19	18.14	17.77	17.75	17.99	18.41
former USSR							
Production	13.00	13.00	10.63	8.84	6.41	..	..
Imports	0.10	0.08	0.01	0.01	0.01	0.01	0.01
Exports	0.03	0.03	0.07	0.09	0.11	..	..
Net trade b/	-0.07	-0.05	0.06	0.08	0.10	..	..
Apparent consumption	13.07	13.05	10.57	8.76	6.31	..	..
NORTH AMERICA							
Production	26.39	25.11	27.26	18.71	17.87	19.31	18.91
Imports	1.17	1.12	1.24	1.47	1.71	1.63	1.58
Exports	2.54	2.56	2.62	2.92	3.16	3.25	3.30
Net trade b/	1.37	1.44	1.38	1.45	1.45	1.62	1.72
Apparent consumption	25.02	23.67	25.88	17.26	16.42	17.69	17.19

a/ At October 1994 session. The Committee's estimates for 1994 and 1995 have been adjusted to make them comparable with the historical (actual) data for 1990-1994.
b/ + = net exports; - = net imports.

Graph 9
Consumption of non-coniferous sawnwood, 1964 to 1994

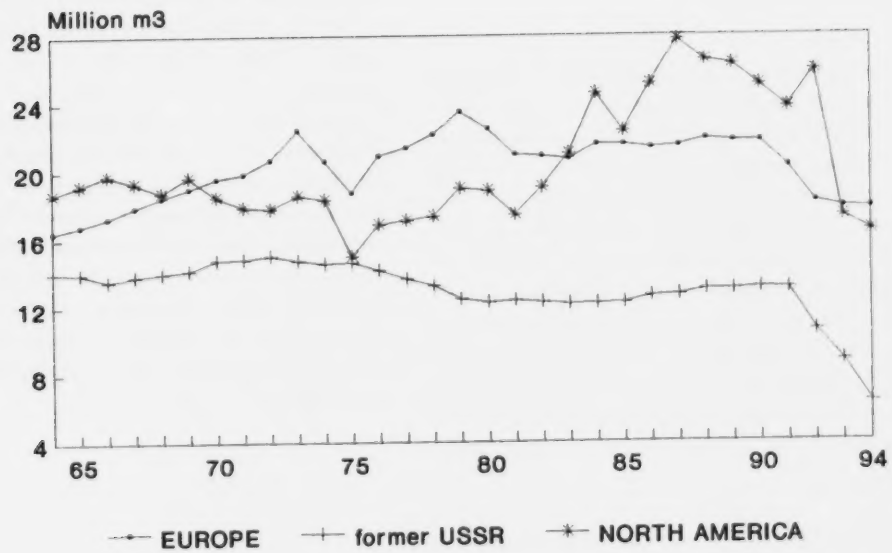


Table 15
Production of non-coniferous sawnwood, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
EUROPE :	16647	14027	13805	13911	106	0.8
of which :						
France	3933	3300	2966	3164	198	6.7
Turkey	1574	1561	2062	1703	-359	-17.4
Romania	1185	1600	1600	...	...	...
Germany	1723	1630	1164	1202	38	3.3
Italy	1000	1000	900	1000	100	11.1
former Yugoslavia	1880	550	953	885	-68	-7.1
Poland	509	525	566	663	97	17.1
former Czechoslovakia	523	250	460	560	100	21.7
Spain	603	782	558	...	...	...
Hungary	735	518	358	330	-28	-7.8
Belgium-Luxembourg	270	284	284	...	...	...
Denmark	400	252	245	...	...	...
Other countries	2311	1775	1689	1717	28	1.6
former USSR	13000	10628	8844	6407	-2437	-27.6
Canada	1003	806	1123	1002	-121	-10.8
United States	24103	26456	17587	16872	-715	-4.1
North America	25106	27262	18710	17874	-836	-4.5

Production of non-coniferous sawnwood also fell in *North America*, by 4.5% to 17.9 million m^3. On a smaller volume, Canadian production fell at a faster rate, by 10.8%. In the Appalachian and adjoining hardwood (non-coniferous) region of the United States, a number of new band mills have been built in the last two years, primarily to serve the more profitable export market since domestic consumption was declining.

Finally, in the *Russian Federation* in 1994, production of non-coniferous sawnwood fell by no less than 32.0% to 5.5 million m^3. In 1994, no pattern exists in the other countries in transition as some reported production increases (the Czech Republic, up by 2.0%, Poland, up by 17.1% and the Slovak Republic, up by 46.3%) while others reported decreases in production (Croatia, down by 11.4% ; Hungary, down by 7.8%; and Slovenia, down by 3.8%.)

At the October 1994 session, the Timber Committee forecast continued growth in Europe of apparent consumption, production and trade of non-coniferous sawnwood in 1995. In contrast consumption, production and trade decreases or minor changes were forecast in North America and the former USSR.

(iii) Trade - temperate zone

European exports of non-coniferous sawnwood increased strongly, by 15.6% in 1994, to 2.9 million m^3 (table 16). France exported 27.2% more in 1994 to traditional markets such as Germany, Belgium, Italy and Spain. German non-coniferous sawnwood exports increased 22.0% as did those of many other countries. In central and eastern European countries, exports in 1994 increased on the whole as German, Austrian and Italian consumption increased

Table 16
Exports and imports of non-coniferous sawnwood, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
EXPORTS						
EUROPE :	2848	3082	2504	2894	390	15.6
of which :						
former Yugoslavia	713	857	711	722	11	1.5
France	691	668	530	674	144	27.2
Germany	304	288	296	361	65	22.0
former Czechoslovakia	125	40	111	221	110	99.1
Netherlands	238	226	182	171	-11	-6.0
Hungary	152	226	142	153	11	7.6
Austria	101	90	92	100	8	8.7
Belgium-Luxembourg	188	217	95	...	...	...
Switzerland	61	60	65	73	8	12.3
Italy	34	34	63	70	7	11.1
Other countries	240	376	218	255	37	17.2
Canada	480	426	647	793	146	22.6
United States	2079	2197	2275	2368	93	4.1
North America	2559	2623	2922	3161	239	8.2
IMPORTS						
EUROPE :	6394	7189	6461	6730	269	4.2
of which :						
Italy	1612	1739	1649	1739	90	5.5
Belgium-Luxembourg	591	945	946	...	...	...
Netherlands	733	786	785	705	-80	-10.2
Germany	733	819	630	667	37	5.9
Spain	735	737	583	525	-58	-9.9
United Kingdom	676	626	509	514	5	1.0
France	488	554	406	456	50	12.3
Austria	149	133	126	156	30	23.8
Portugal	86	164	128	...	...	...
Hungary	16	29	49	113	64	129.8
Other countries	575	657	650	781	131	20.2
former USSR	75	10	9	12	3	34.1
Canada	586	631	725	843	118	16.3
United States	534	613	740	871	131	17.7
North America	1120	1244	1465	1714	249	17.0
Japan	1608	1591	1791	...	...	...

This rise in exports is compatible with the above mentioned fall in production, because the declines in production were confined to major, but non-exporting producers, notably Turkey. The country grouping "former Yugoslavia" combines statistics received from Croatia, the former Yugoslav Republic of Macedonia and Slovenia with secretariat estimates for the rest.

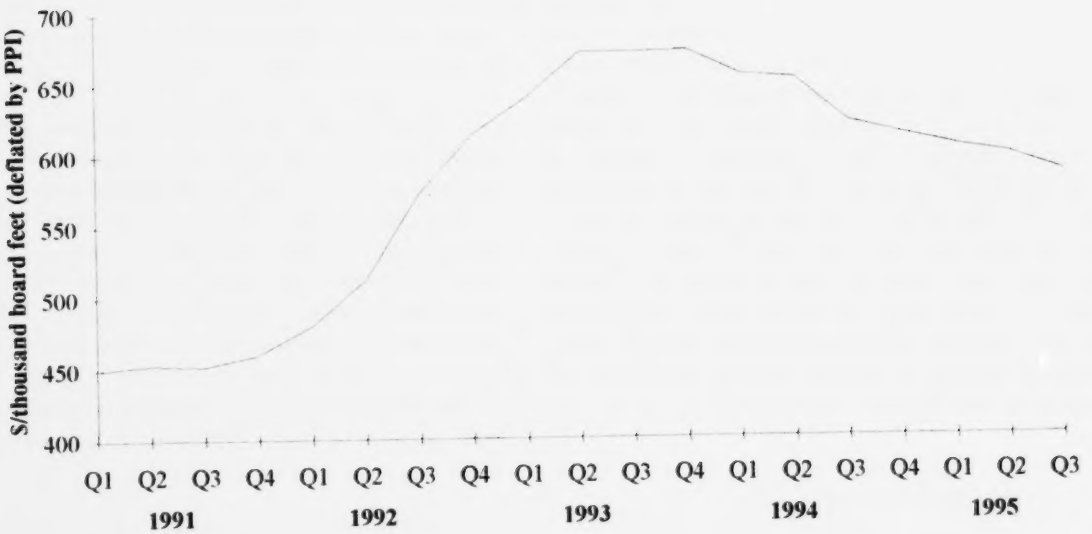
North America continued to export more, 4.1% in 1994 as United States exports were strong at 2.4 million m^3. 23.8 % of United States exports went to Europe in 1994, 24.1% went to the Pacific Rim and 22.2% went to Canada. Canada also found that its non-coniferous sawnwood was more affordable due to the weaker Canadian dollar and exports moved up 22.6% to 793,000 m^3. Canadian exports increased to the United States by 12.8% in 1994, to the United Kingdom by 95% and to Japan by 18.0%.

According to the American Hardwood Export Council, non-coniferous sawnwood exports to Europe have succeeded in introducing alternative species to the highly demanded white oak and cherry, as well as alternative lower grades of sawnwood. They predict a continued decline in the export of non-coniferous logs to Europe as importers forego value-added at their mills in favour of lower shipping costs for dry, defected or semi-defected, pre-cut parts. Prices have stabilized, but the exhibited trend in 1994 and 1995 was a fall in the price of non-coniferous sawnwood in the United States (graph 10).

European imports of non-coniferous sawnwood increased in 1994 by 4.2% over 1993. Most reporting countries in transition stated that imports were up. *North American* imports also increased in 1994, by 16.3% in Canada and by 17.7% in the United States. Most of these are cross-border trading and some tropical sawnwood.

Graph 10

United States non-coniferous sawnwood price*, 1991 to 1995



* Prices paid for 4/4, i.e., 1-inch or 2.5 centimeter thick, 1 common grade, Appalachian region red oak sawnwood. Deflated by the United States producer price index with a 198 base.

Source: *Hardwood Market Report*

The foregoing section on non-coniferous trade primarily concerns temperate species, but some tropical sawnwood was included in imports. In 1994 approximately 80% of United States imports of non-coniferous sawnwood were tropical whereas in Europe the ratio was approximately 38% (see next section).

In the United States, prices of non-coniferous sawnwood moved up in dollars in 1994 and 1995, but fell in other currencies as illustrated by the following graphs of a "market basket" of timber export items adjusted for each importer's species mix, transportation costs and most importantly, exchange rates (graph 11).

The joint Timber Committee and FAO European Forestry Commission study tour held in May, 1995 covered the United States hardwood resource and its utilization. Of interest to readers of the *Review* is that the United States hardwood industry exports 15% of its production of the higher grades, i.e., "number 2 common and better." United States non-coniferous sawnwood exports have been slowly increasing over the last 30 years and last year's 3.2 million m^3 of exports were a new record high. Red oak was the most popular domestic species produced and it represents about one-third of the harvest. For the export market, however, white oak is the most desired species. European importers pay premium prices for defect-free sawnwood but the American Hardwood Export Council reports some progress in introducing lower qualities and alternative species. As the United States non-coniferous resource expands in volume, through maturation and some increased area, new mills are being established and older facilities are being renovated, primarily from circular saws to band saws in order to reduce kerf and thus generate higher sawnwood yields, especially from smaller-diameter logs. Many mills are also capturing additional revenues through value-added processing of drying, planing, moulding and machining into furniture components.

(iv) Trade - tropical zone

This section discusses tropical sawnwood as well as other tropical timber, i.e., logs, veneer and plywood, from the perspective of trade with the ECE region. With the generous provision of data and analytical input by the ITTO secretariat and International Trade Center/ITTO Market News Service, additional developments in tropical timber markets are discussed.

In contrast to North America where *tropical timber* represents a small portion of non-coniferous sawnwood, *European* markets have traditionally been significant consumers of this tropical source. Recent years have seen a continual decline in European imports of tropical sawnwood, down by 1.2% from 1993 to 1994 and down by 18.3% from 1990, according to the Timber Committee, due to a strengthening environmental concerns of consumers as well as normal market factors. To alleviate consumers' and traders' concerns, a number of tropical producing countries are establishing certification systems to ensure sustainable forest management. Certification schemes are not limited to tropical timber as countries with northern temperate and boreal forests are also initiating certification schemes. At present, however, the volumes of certified timber in international trade are very small.

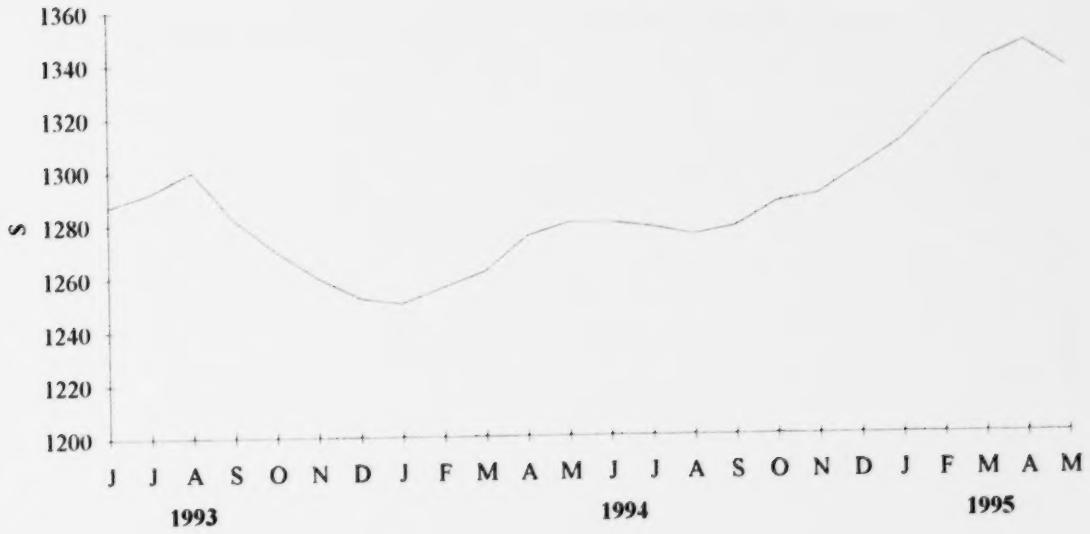
In mid-1995 the European market for tropical sawnwood was shifting away from southeast Asia and instead increasing imports from Africa and South America due to lower prices and availability of supply. Southeast Asian exports of sawnwood have fallen, by 5.5% in 1994 over 1993, as exporting countries reduced log harvesting or exports, as competition for available supply increased within the region and as value-added production was developed in producer countries.

The Timber Committee forecasts for 1995 tropical timber apparent consumption in Europe indicate a drop of over 7%, consistent with the trend of the last 5 years. However, in 1995 European imports are forecast to improve slightly, by 1.2% over 1994, the first gain in 5 years. On rather moderate volumes, imports of France and the Netherlands were forecast to increase, while German imports are forecast to drop 9.4%. In the United States tropical sawnwood consumption and imports were forecast to fall in 1995 after a slight increase in 1994.

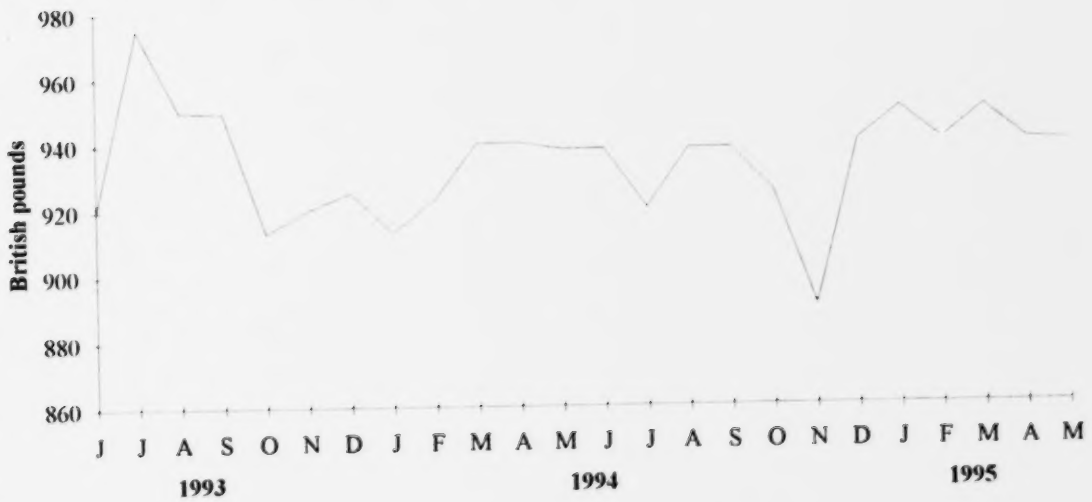
The trend continues to produce increased value-added products at the expense of exports of logs and even sawnwood. Log exports from southeast Asia attained the maximum level of 40 million m^3 in 1978 and declined to 12.8 million m^3 in 1994.

Graph 11

United States non-coniferous export price index in dollars, 1993 to 1995



United States non-coniferous export price index in British pounds, 1993 to 1995

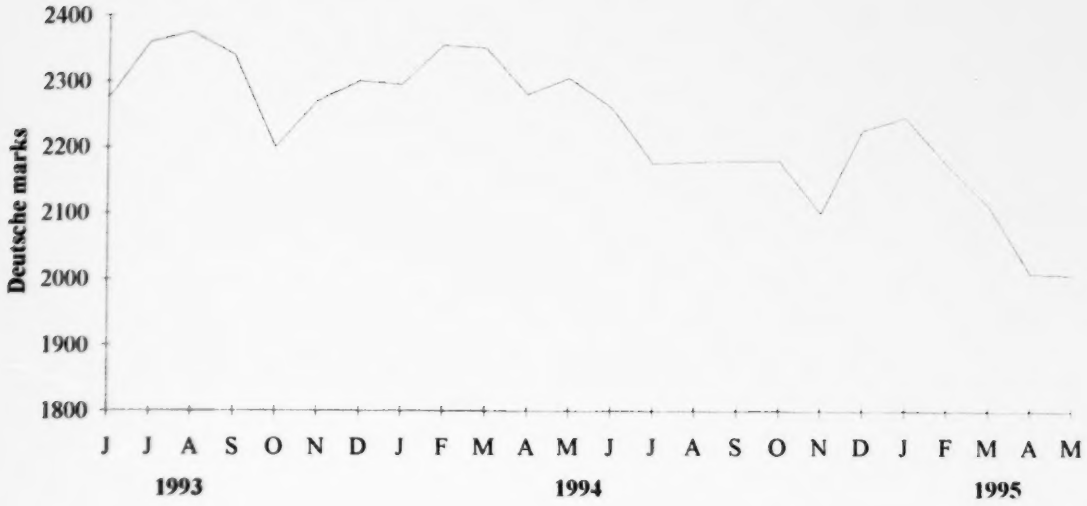


Source: *Hardwood Review Export*, May 1995.

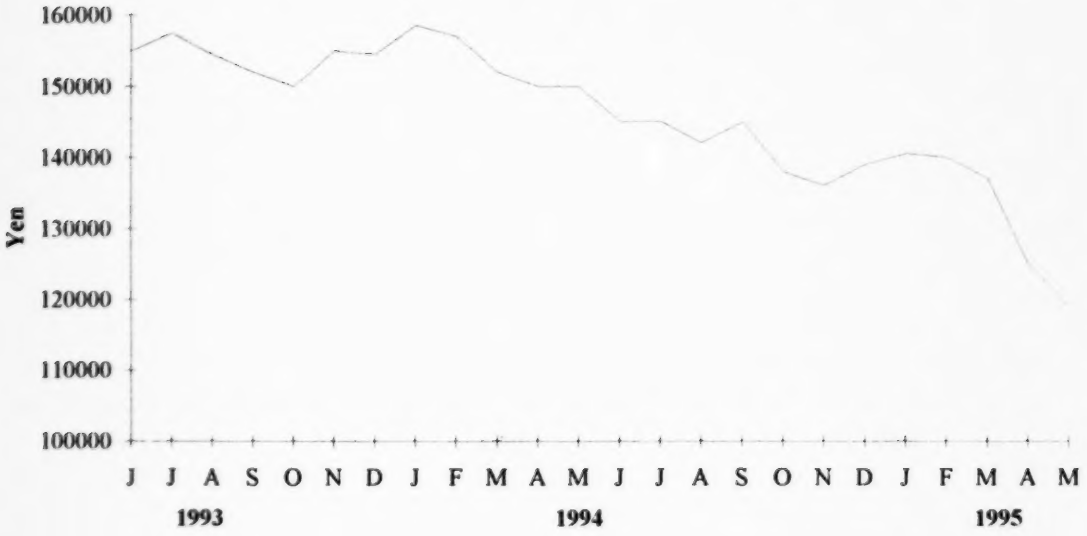
Graph 11

(continued)

United States non-coniferous export price index in deutsche marks, 1993 to 1995



United States non-coniferous export price index in yen, 1993 to 1995



Source: *Hardwood Review Export*, May 1995

Many countries dissuade log exports through legislative measures which vary from one extreme, export bans, to the other, providing financial incentives to build sawmills, plywood mills and furniture plants. For example, the Solomon Islands raised export taxes from July, 1994 to 65% for logs valued at \$75+ per m^3 and 35% for logs valued less than \$75/m^3. This is part of a government plan to reduce log exports to zero over the next 3 years. One producer, Indonesia, has not exported any logs for several years.

From ITTO forecasts, for the ITTO member producer countries (which represent approximately 80% of tropical timber exports), the drop in log *exports* is evident (table 17). Even if log exports increased slightly in 1994, by 7.0% over 1993, they were still down 37.6% from 1989. These totals are heavily weighted towards the Asia-Pacific region which accounted for 81.9% of tropical timber exports in 1994. While exports of logs, sawnwood and veneer fell in 1994 in the Asia-Pacific region, the other two regions had increased timber (logs, sawnwood, veneer and plywood) exports. Perhaps these data indicate a levelling out of tropical timber exports after a 5-year drop. The fall in exports is also partly due to several tropical timber producers becoming net importers of logs, indicating a shortage from domestic forest resources; in 1992, Thailand imported 2.0 million m^3 of logs, India, 0.7 million m^3 and the Philippines, 0.5 million m^3.

Japan increased tropical log imports in 1994 by 13.5% reversing a trend of declining log imports. Japan still remains the largest consumer of tropical logs but in 1994 its tropical sawnwood imports fell by 13.6% and Japan was second behind Thailand's advancing sawnwood imports. Malaysia remains by far the leading exporter of logs, even though restrictions exist on exports from Sarawak and an export ban continues in Sabah and Peninsular Malaysia. Although Malaysian log exports increased in 1994, by 3.4%, to 9.7 million m^3, they were well under the 1992 level of 17.8 million m^3. Southsea log prices rose steeply in early 1994 but came down again at the year-end; a similar rise occurred in 1995 but prices moved back to almost January levels by mid-year (graph 12). The Sabah government has also raised the processing quota from 38% of locally produced logs to 50% and offered incentives to encourage downstream processing. The result has been an increase in exports of sawn timber (to 1.7 million m^3 in 1994), an increase in the number of sawmills, and an increase in plywood production and exports.

The largest European importer of tropical logs is France, primarily from Africa. The French market for tropical timber was said to be improving in early 1995 with sawnwood prices stable and plywood prices rising due to competition from Japan and Korea. But French imports of tropical logs and sawnwood from Africa in mid-1995 were down as suppliers faced logging restrictions in Côte d'Ivoire or where monopolies reduced supply in Gabon or where transportation problems existed in the Congo. Shipments from Brazil were interrupted due to the rainy season. Rising freight costs reduced imports from Asia.

The conclusion of the Uruguay Round of GATT (General Agreement on Tariffs and Trade) and the establishment of the World Trade Organization is one development that should have a major effect on tropical timber. Japan's relatively high tariffs are to be reduced gradually, (but not as far or as fast as desired by North American and European trading partners.) The failure to agree on worldwide elimination of tariffs on timber products meant many countries only reduced their existing tariffs, rather than abolishing them. Japan's tariffs for 1995 are highest for value-added products like plywood (9% to 15%), laminated sawnwood (13% to 16%), sawnwood (0% for paulownia and 9% for non-coniferous tropical and temperate), particleboard (7% to 9%) and fibreboard (3% to 5%) and this tends to favour domestic wood-processing industries.

In 1994, *Indonesian* sawnwood and plywood prices fell, especially in the principal Japanese market, and the result was a decline in the value of exports by 2.4% over 1993 (graph 13). Plywood exports declined from \$3.5 to \$3.2 billion from 1993 to 1994. Moreover, the value of Indonesia's furniture, component and particleboard exports also fell by 20% from \$1.2 billion in 1993, again attributed to declining wood prices to Japan. The decline was tempered somewhat by the rise in export value for wood products from the furniture and millwork industries which rose by 36% from 1993's \$103.5 million.

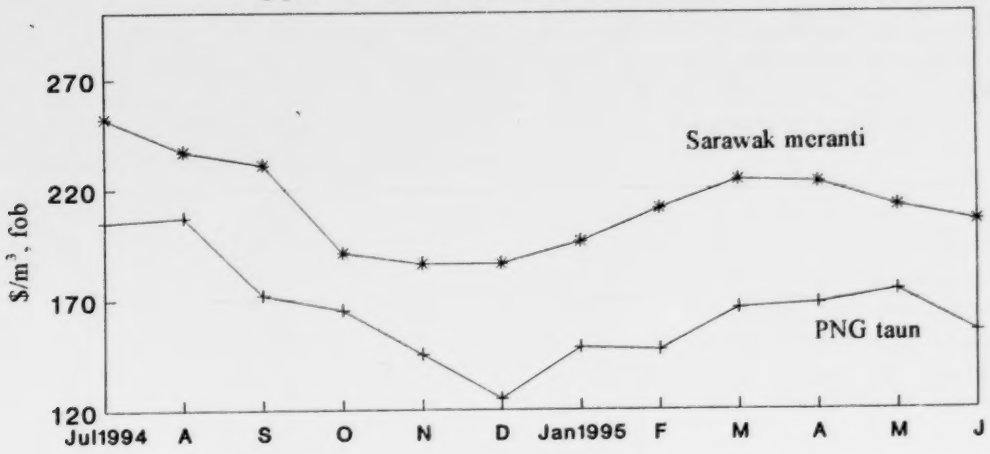
The value of *Brazilian* timber exports shot up in 1994 by 19% to \$952 million from 1993 as sawnwood prices increased in the first quarter but moved down below \$1000/m^3 for mahogany/swietenia in summer 1994 (graph 14).

Table 17
Tropical forest products exports[1], 1989-1993
(thousand m^3)

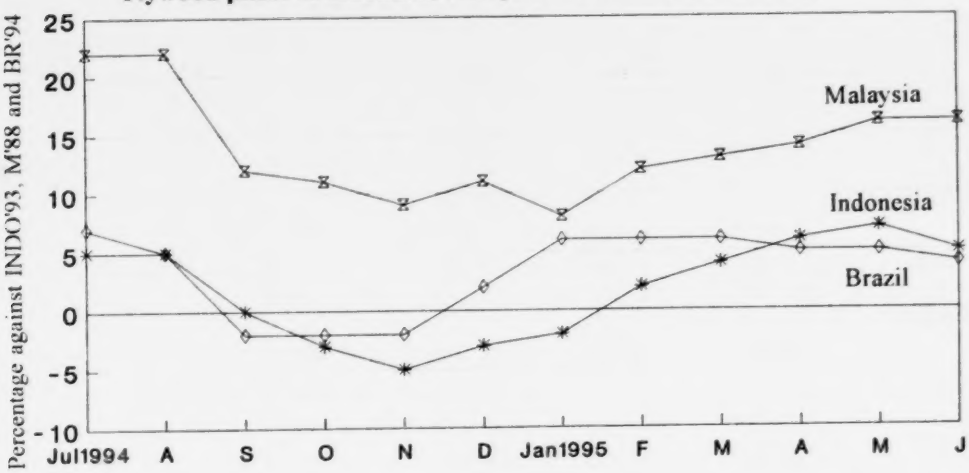
	1989	1990	1991	1992	1993	1994[2]
Africa						
logs	3,684	3,914	3,320	2,369	2,903	3,435
sawnwood	960	1,201	1,010	1,101	1,040	1,125
veneer	197	195	171	216	221	234
plywood	75	60	79	207	191	212
Asia Pacific						
logs	22,474	21,579	20,832	19,795	12,279	12,806
sawnwod	9,171	5,702	6,037	6,290	5,903	5,581
veneer	340	423	543	821	761	612
plywood	9,103	9,701	10,172	10,532	12,078	12,487
Latin American/Caribbean						
logs	5	5	5	77	69	85
sawnwood	444	544	394	619	732	756
veneer	41	56	51	118	294	294
plywood	372	288	381	545	818	824
Total						
logs	26,163	25,498	24,157	22,241	15,251	16,326
sawnwood	10,575	7,447	7,441	8,010	7,675	7,462
veneer	578	674	765	1,155	1,276	1,140
plywood	9,550	10,049	10,632	11,284	13,087	13,523

[1] Volumes differ from FAO statistics as ITTO coverage is 80% of tropical exporters. ITTO data were used to compare to their 1994 forecasts.
[2] Forecast made in 1994
Source: *Annual Review and Assessment of the World Tropical Timber Situation, 1993-1994*, ITTO, 1995

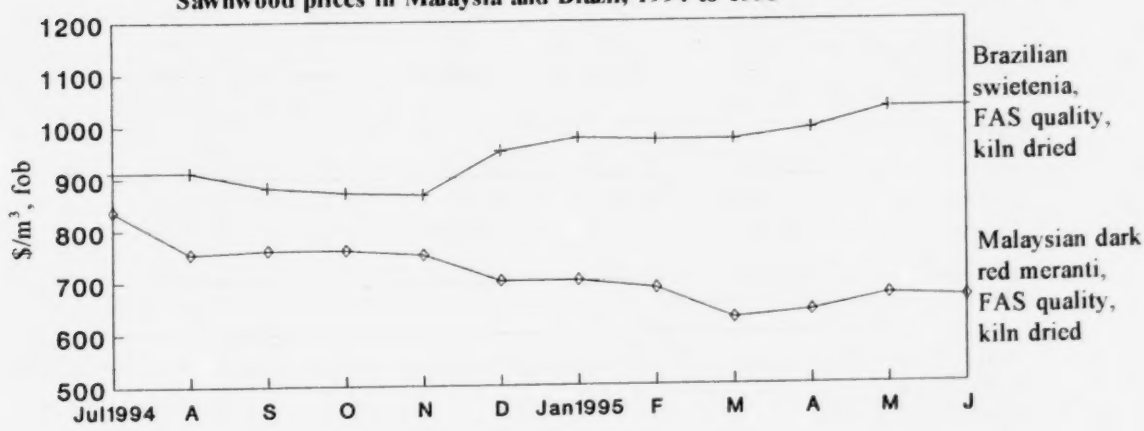
Graph 12
Log prices in Sarawak and PNG, 1994 to 1995



Graph 13
Plywood prices in Indonesia, Malaysia and Brazil, 1994 to 1995



Graph 14
Sawnwood prices in Malaysia and Brazil, 1994 to 1995



Source: *Market News Service*, International Trade Centre, July 1995.

The largest growth in value came from sawnwood, up 43%, followed by veneer, up 33%, furniture, up 8%, and plywood and hardboard, up 7%. Plywood and veneer production is poised to grow as Brazil begins to harvest more of its pine and eucalyptus plantations. About 30% of production of plywood is exported.

Tropical forest products *production* is undergoing similar trends as exports. Tropical sawnwood production in tropical countries, i.e., excluding production in temperate zones from imported tropical logs, bottomed out in 1991, due to reduced demand as major markets underwent economic recessions (table 18). Sawnwood production increased in 1994 in Africa, by 8.2% to 1.2 million m^3, and in Latin America/Caribbean, by 3.3% to 0.8 million m^3, but fell for the largest producing region, Asia-Pacific, by 5.5% to 5.6 million m^3. In general, veneer and plywood production increased in 1994 as producer countries manufacture and export higher value-added products.

Table 18
Tropical Forest Products Production[1], 1989-1993
(thousand m^3)

	1989	1990	1991	1992	1993	1994[2]
Africa						
logs	9,387	10,440	8,842	8,051	9,184	10,214
sawnwood	2,236	2,073	1,762	1,922	1,837	2,108
veneer	321	358	302	314	350	350
plywood	276	240	252	286	272	283
Asia Pacific						
logs	100,642	99,143	101,190	103,542	97,555	95,617
sawnwod	29,155	28,566	28,905	29,021	28,027	27,955
veneer	638	723	952	1,512	2,323	2,389
plywood	10,405	10,930	11,682	12,439	13,525	13,948
Latin American/Caribbean						
logs	33,050	29,042	25,301	28,317	27,743	28,084
sawnwood	10,998	9,568	8,814	10,899	11,325	11,432
veneer	255	251	253	245	345	346
plywood	1,432	1,592	1,442	1,481	1,706	1,786
Total						
logs	143,079	138,625	135,333	139,910	134,482	133,915
sawnwood	42,389	40,207	39,481	41,842	41,189	41,495
veneer	1,214	1,332	1,507	2,071	3,018	3,085
plywood	12,113	12,762	13,376	14,206	15,503	16,017

[1] Values differ from FAO statistics as ITTO coverage is 80% of tropical producers. ITTO data were used to compare to their 1994 forecasts.
[2] Forecast made in 1994
Source: *Annual Review and Assessment of the World Tropical Timber Situation, 1993-1994*, ITTO, 1995

D. Wood-based panels

(i) Overview

Overall demand for wood-based panels is essentially determined by the same broad factors as that for sawnwood, i.e., developments for housing and furniture, but the markets behave in very different ways. Most panel producing units are larger than all but the very largest export oriented sawmills, which modifies profoundly the relative strengths of the market partners and makes markets less transparent (through the lack of a large number of small individual transactions). Above all, product development is changing the situation radically, transforming the relative strengths and weaknesses of products over a short time. This rapid development also reduces the usefulness of the traditional type of statistics, as presented in the *Review* and the statistics issues of *Timber Bulletin*, which, of necessity, use product groupings which are stable over time and, therefore, may no longer reflect market realities. For instance, a single product group, such as fibreboard, includes products which are marginal or obsolescent, alongside new and expanding products such as MDF, rendering the totals difficult to interpret, or even meaningless.

Some of the most interesting developments on panels markets in recent years have been on the interface of consumer demand, technical progress and structural changes in the volume and location of raw material supply. As they are complex, it is difficult to present them fully in a document with very short deadlines such as the *Review*. Nevertheless, a few of the most important developments will be presented, at the expense of a more detailed commentary on the 1994 data.

A primary source of difficulty in analysis is that the traditional classification into particle board, fibreboard and plywood, which is based essentially on process (and type of raw material) is no longer adequate to describe the situation, where market trends are strongly influenced by a) combinations of panels; b) further processed or improved versions of standard panels with extra performance characteristics and different, more specialised market niches not to mention higher prices; and c) new panels which cut across the standard definitions based on technology and use characteristics. For instance, OSB technology is derived (via waferboard) from particle board technology, yet OSB competes in the structural panel market with plywood which is manufactured using totally different technologies and raw material. MDF uses fibres as raw material, but in a very different process to that of hardboard (it is a dry, not wet, process), and competes in many respects with solid wood. The Joint FAO/ECE Working Party on Forest Economics and Statistics is considering modifying the classification but as this work must be agreed in detail by inter-governmental bodies and coordinated with international multi-sector classifications, e.g., for trade, it is always some steps behind the latest market developments. For this reason, this section uses information from the trade press and industry associations when developments are not apparent from the official statistics.

Another factor which must be borne in mind is the increasing globalization of panels markets, and in particular the real influence of developments in Asia on the ECE region.

In both Europe and North America, consumption of wood-based panels as a group rose, by 3.1% and 5.4% respectively in 1994 (table 19). In Europe, however, this was the first increase after three successive falls, and the volume was still lower than in 1990, while in North America, it was the third successive record year. In 1990, North American consumption of wood-based panels was 1 million m^3 lower than in Europe, but in 1994, it was 6.3 million m^3 (16%) higher. This is the mirror image of the trend for non-coniferous sawnwood.

In Europe, consumption of wood-based panels rose strongly in the largest market, Germany, (+4.8%, to 11.6 million m^3, more than double the second largest country), because of the strength of the housing market. Conversely panel consumption fell in Italy and France, where housing was weak. Rapid increases in apparent consumption of panels were reported for Spain (+13.5%), Poland (+17.7%), Sweden (+10.4%), and Norway (+27.3%), although an influence of faulty trade statistics cannot be ruled out for the EU countries in this group. For Turkey, the 24% fall in panel consumption in 1994 is consistent with general economic developments.

Table 19
Apparent consumption of wood-based panels (excluding veneer sheets) in Europe, the former USSR and North America, 1990 to 1994

	Volume					Percent of total	
	1990	1991	1992	1993	1994 (prelim.)	1990	1994 (prelim.)
			(million m3)				(%)
EUROPE							
Particle board	28.92	28.24	27.14	26.94	27.58	72.2	71.5
Plywood	6.44	5.77	6.00	6.00	6.13	16.1	15.9
Fibreboard	4.72	4.30	4.41	4.45	4.85	11.7	12.6
Total	40.08	38.31	37.55	37.39	38.56	100.0	100.0
Change on previous year							
- Volume		-1.77	-0.76	-0.16	1.17		
- Percent		-4.4	-2.0	-0.4	3.1		
former USSR							
Particle board	6.17	5.58	5.24	4.05	2.89	53.9	71.9
Plywood	1.40	1.32	1.40	0.83	0.43	12.2	10.7
Fibreboard	3.87	3.87	1.61	1.02	0.70	33.9	17.4
Total	11.44	10.77	8.25	5.90	4.02	100.0	100.0
Change on previous year							
- Volume		-0.67	-2.52	-2.35	-1.88		
- Percent		-5.9	-23.4	-28.5	-31.9		
NORTH AMERICA							
Particle board	14.54	14.37	16.82	18.10	19.42	35.6	43.3
Plywood	20.77	18.38	18.81	18.86	19.41	50.8	43.2
Fibreboard	5.57	5.32	5.50	5.65	6.07	13.6	13.5
Total	40.88	38.07	41.13	42.61	44.90	100.0	100.0
Change on previous year							
- Volume		-2.81	3.06	1.48	2.29		
- Percent		-6.9	8.0	3.6	5.4		

Consumption of wood-based panels in the Russian Federation fell by 34.8% to 3.3 million m^3 in 1994, as did Belarus, down by 17.8%, Croatia, down by 4.6%, Moldova, down by 63.8% and Lithuania, down by 3.2%. Most countries in transition, however, increased consumption of wood-based panels in 1994: the Czech Republic, 24.4%; Estonia, 26.0%; Hungary, 8.8%; Latvia, 28.1%; Slovakia, 2.2%; and Slovenia, 7.6%.

Prices for adhesives, a major cost element for all panels, rose world-wide. The major cause was a sharp increase in the price of methanol, used to make formaldehyde, an ingredient of adhesives for panels. In late 1993, demand for traditional methanol based products, such as formaldehyde and acetic acid, was already strong, but then came new demand for MTBE (methyl *tert*-butyl ether), required as an additive to petrol (gasoline) by the United States federal government. Between fourth quarter 1993 and October 1994, methanol prices went from $0.50/gallon to $1.30/gallon. Despite planned capacity increases, the tight market situation for methanol is expected to continue for some years.

(ii) Particle board

In Europe, particle board remains by far the most important panel (measured by volume of consumption), accounting for 27.6 million m^3 of a total of 38.6 million m^3 (71.5%). European apparent consumption of particle board rose by 2.4% in 1994, but still did not surpass the record level of 1990 (table 20 and graph 15). Germany accounts for over 30% of European production and consumption of particle board (table 21). On the German market, demand from housing (which now takes more particle board than furniture manufacture, where particle board has lost market share to MDF and sawnwood) was strong: domestic production rose by 8.5% and consumption by 4.8%. German prices for particle board (domestic) which remained just over 80 (1991 = 100) until September 1994 rose to 92.7 in April 1995, an increase of 14% in 7 months. Apart from the strong demand, there were cost factors at work, notably rises in the price of pulpwood (stimulated by the boom conditions on international pulp markets) and of adhesives.

In North America, consumption of plywood and of particle board were almost exactly at the same level, each accounting for 43% of the total (as recently as 1990, plywood accounted for 50%). Particle board production (which includes, or should include, OSB) rose by 5.5% to 19.5 million m^3, nearly 5 million m^3 (31%) more than in 1991.

Production and exports of particle board fell in Russia in 1994, by 33.0 and 51.3% respectively. This was opposite in some other countries in transition which increased apparent domestic consumption of particle board in 1994. Production increased in the Czech Republic by 7.0%, in Hungary by 17.9%, in Latvia by 46.5%, in Poland by 18.2%, and in the Slovak Republic by 2.8%. Conversely, particle board production fell in Croatia by 7.1%, in Belarus by 22.6%, in Lithuania by 16.4%, and in Moldova by 63.8%.

(iii) Fibreboard

The most dramatic feature of fibreboard markets in recent years has been the steep rise in production and consumption of MDF, which has technical advantages over other panels in some end use sectors, notably furniture (in particular it can be machined much more effectively than other panels), and uses small-sized wood as raw material. From negligible levels through most of the 1980s, European production has risen to 3.5 million m^3 in 1994, coming from 16 countries (graph 16). These data are from EMB (EURO MDF Board), the manufacturers' association, as it is not at present possible to identify MDF separately in the official statistics. If the EMB data are compared to the official data for total fibreboard, it appears that production of other types of fibreboard (hardboard and insulating board) has dropped rapidly, and is now less than half that of MDF. While the data may not be entirely comparable, for instance if some MDF production is wrongly classified as particle board or not reported for reasons of confidentiality, the broad trend appears clear. Makers of wet process fibreboard have in many cases been faced with the need for extensive investment to reduce the emissions from their plants, which has encouraged some to convert wet-process (hardboard) plants to dry-process (MDF).

Table 20
Particle board (wood and non-wood) balance in Europe, the former USSR and North America, 1990 to 1994
(million m^3)

	1990	1991	1992	1993	1994 (prelim.)	Timber Committee estimates a/	
						for 1994	for 1995
EUROPE							
Production	28.41	27.89	26.82	27.35	28.32	28.39	29.14
Imports	6.71	6.67	6.67	6.16	6.44	6.26	6.31
Exports	6.20	6.32	6.35	6.57	7.18	6.71	6.97
Net trade b/	-0.51	-0.35	-0.32	0.41	0.74	0.45	0.66
Apparent consumption	28.92	28.24	27.14	26.94	27.58	27.94	28.48
former USSR							
Production	6.40	5.69	5.30	4.63	3.25	4.34	4.56
Exports	0.23	0.11	0.06	0.58	0.36	0.63	0.64
Apparent consumption	6.17	5.58	5.24	4.05	2.89	3.71	3.92
NORTH AMERICA							
Production	14.94	14.83	17.26	18.52	19.53	19.42	20.27
Imports	1.81	1.48	2.20	3.05	3.79	3.69	3.79
Exports	2.21	1.94	2.64	3.47	3.90	3.77	4.02
Net trade b/	0.40	0.46	0.44	0.42	0.11	0.08	0.23
Apparent consumption	14.54	14.37	16.82	18.10	19.42	19.34	20.04

a/ At October 1994 session. The Committee's estimates for 1994 and 1995 have been adjusted to make them comparable with the historical (actual) data for 1990-1994.
b/ + = net exports; - = net imports.

Graph 15
Consumption of particle board, 1964 to 1994

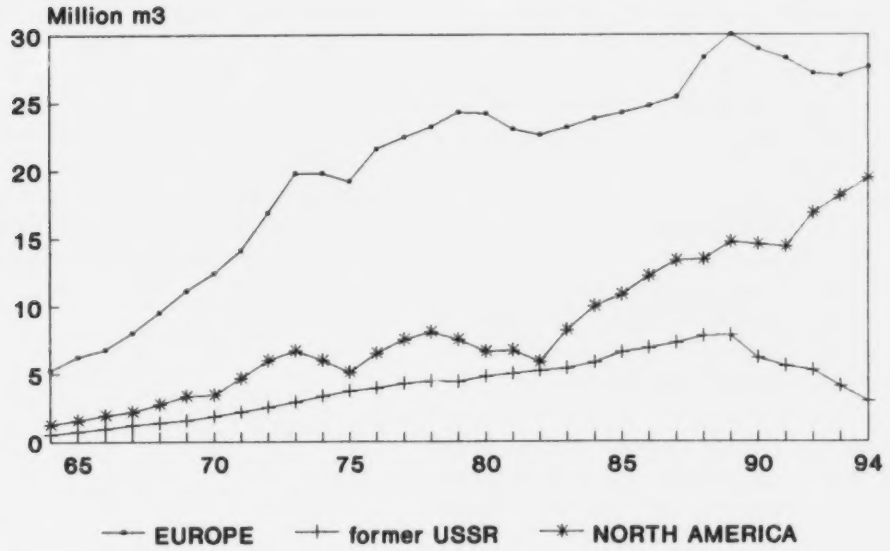


Table 21
Production and trade of particle board (including non-wood), 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
PRODUCTION						
EUROPE :	27891	26816	27353	28322	969	3.5
of which :						
Germany	7441	7451	7961	8639	678	8.5
France	2638	2668	2461	2534	73	3.0
Belgium-Luxembourg	2323	2350	2350	...	...	...
Italy	3030	2265	2250	2202	-48	-2.1
United Kingdom	1569	1737	1756	1803	47	2.7
Spain	1795	1680	1660	1730	70	4.2
Austria	1689	1606	1594	1666	72	4.5
Poland	941	1008	1129	1334	205	18.2
former Czechoslovakia	665	560	701	736	35	5.0
Switzerland	699	762	742	656	-86	-11.6
Turkey	636	947	883	625	-258	-29.2
Sweden	762	581	597	609	12	2.0
Portugal	787	630	575	...	...	...
Finland	385	354	439	477	38	8.7
Other countries	2531	2217	2255	2386	131	5.8
former USSR	5692	5297	4628	3250	-1378	-29.8
Canada	2655	3557	4173	4736	563	13.5
United States	12179	13707	14351	14798	447	3.1
North America	14834	17264	18524	19534	1010	5.5
EXPORTS						
EUROPE :	6316	6354	6572	7175	603	9.2
of which :						
Belgium-Luxembourg	1819	1775	1404	...	...	...
Germany	1001	980	1026	1316	290	28.3
France	718	760	646	913	267	41.3
Austria	926	871	891	909	18	2.0
Switzerland	386	464	480	427	-53	-11.0
Portugal	475	393	347	...	...	...
former Czechoslovakia	2	30	315	300	-15	-4.8
Spain	137	148	302	203	-99	-32.7
Finland	132	103	195	200	5	2.6
Other countries	720	831	966	1157	191	19.7
former USSR	110	60	576	356	-220	-38.2
Canada	1240	2064	2968	3444	476	16.0
United States	700	574	501	457	-44	-8.8
North America	1940	2638	3469	3901	432	12.5
IMPORTS						
EUROPE :	6672	6671	6163	6439	276	4.5
of which :						
Germany	1927	1808	1732	1687	-45	-2.6
United Kingdom	1138	1193	1165	1167	2	0.2
Netherlands	680	704	604	755	151	25.0
France	802	733	661	708	47	7.1
Italy	378	444	355	346	-9	-2.5
Spain	326	387	322	328	6	1.9
Switzerland	176	137	166	214	48	28.9
Belgium-Luxembourg	190	191	208	...	...	...
Other countries	1055	1073	950	1026	76	8.0

Germany was the largest producer of MDF in Europe in 1994, with 21% of the total, followed by Italy (20%), Spain (14%), United Kingdom (11%) and France (10%). Of the total, about 18% is thin MDF, which can replace hardboard or thin plywood, or it can be laminated on various wood substrates to improve surface characteristics. Europe was the first region to see large scale development of MDF, but there is now demand and new capacity, in other regions, notably the Far East. Demand for MDF has grown faster than capacity in Asia, so that 12% of the 1994 European MDF production (about 0.4 million m^3) was exported to non-European, principally Asian, destinations e.g., Japan, where imports exceeded domestic production for the first time, Korea and Taiwan.

The trend to exports outside Europe is however unlikely to continue at the same level as capacity is expanding world wide. According to *Wood-based Panels International*, world MDF capacity was distributed as follows in 1994 (graph 17).

	1000 m^3/year	%
Europe	3,925	35.6
Asia/Oceania	3,376	30.6
North America	2,561	23.2
Ex-USSR	610	5.6
Latin America	307	2.8
Africa	158	1.4
Middle East	86	0.8
Total	11,023	100.0

Nine additional MDF plants are forecast for Europe by 1997, and seven in Canada, of which five in Interior BC, which will presumably use chips from the sawmills in that region, and one in the United States. Many mills have been announced for Asia, as well as Latin America (Argentina, Chile and recently Brazil). By 1996, Asian capacity is expected to be 5.5 million m^3 (2.1 million m^3 more than in 1994), with 73 lines in 13 countries, including all major forest products consumers (e.g., Japan, South Korea, India, and China) and producers (e.g., Malaysia, Indonesia, New Zealand, etc.). Furthermore the average size of mills world wide appears to be growing, with projects up to 250,000 m^3/year.

Combining all types of fibreboard, (hardboard, medium board, MDF and insulating board), the apparent consumption continued to climb for the third year in Europe and North America, by 9.0% and 7.4% respectively, but fell in the former USSR (table 22 and graph 18). Production of all fibreboard increased 12.9% in Europe and 4.5% in North America in 1994, primarily due to MDF's rise (table 23). Trade advanced considerably in 1994, exports in Europe and North America by 18.7% and 20.6% respectively and imports by 10.7% and 60.8% respectively.

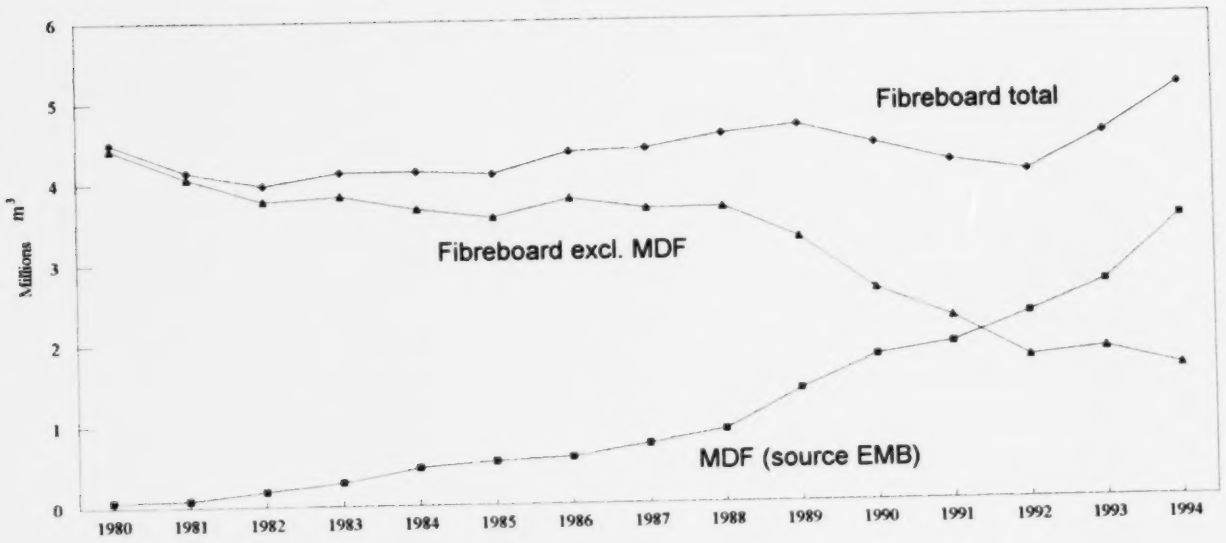
(iv) Oriented strand board

The other panel experiencing rapid growth is OSB, which was developed in North America and which can substitute for plywood in structural applications. North American production of OSB in 1994 was about 10 million m^3 (compared to plywood production of just over 19 million m^3). There are at present only two OSB plants in Europe, with a total capacity of under 0.2 million m^3. However, rapid growth in capacity and production of OSB is forecast. Three million m^3 of new capacity are expected in North America in 1995 and another 4 million m^3 by 1997 (*Asian Timber*, March 1995). In some applications, OSB has better performance than plywood, and is made from considerably cheaper raw material. Furthermore, the supply of peeler logs for plywood, whether in the PNW or western Canada or in southeast Asia, is threatened by concern about sustainable wood supply. It is not possible as yet to forecast the final outcome of the competition between OSB and plywood for the structural panel market, but at present little, if any, investment in new plywood capacity has been announced.

(v) Plywood

There have been dramatic developments on the major international plywood market, which is for tropical plywood in Asia. For some years now, Japanese plywood production has been declining, from around 8.5 million m^3 10 years ago to 5.2 million m^3 in 1994, because of the reduced availability of tropical logs and strong competition from Indonesia, which has built up the world's largest plywood exporting industry (graph 19 and graph 20).

Graph 16
European fibreboard production, 1980 to 1994
million m^3s



Sources: UN-ECE/FAO and EMB

Graph 17

World MDF capacity in 1994 (11 million m3 total)

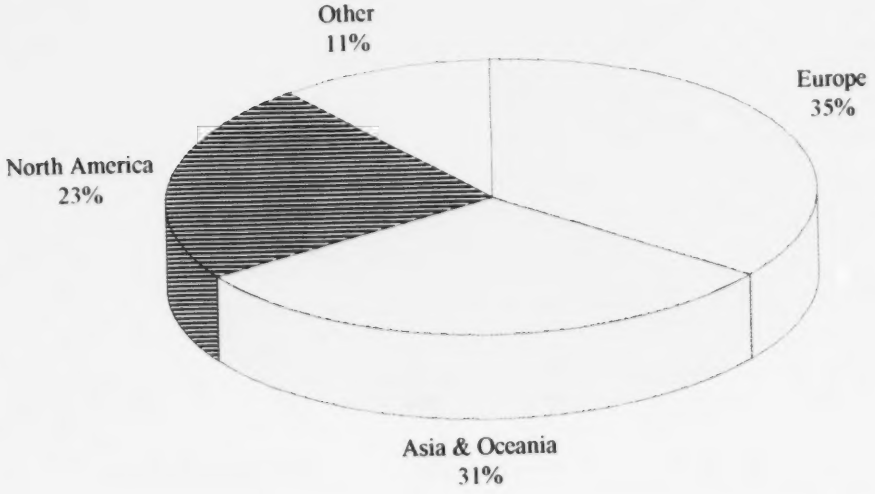


Table 22
Fibreboard balance in Europe, the former USSR and North America, 1990 to 1994
(million m^3)

	1990	1991	1992	1993	1994 (prelim.)	Timber Committee estimates a/	
						for 1994	for 1995
EUROPE							
Production	4.43	4.20	4.06	4.53	5.11	4.94	5.13
Imports	2.15	1.97	2.29	2.10	2.33	2.50	2.55
Exports	1.86	1.87	1.94	2.18	2.59	2.17	2.26
Net trade b/	-0.29	-0.10	-0.35	0.08	0.26	-0.33	-0.29
Apparent consumption	4.72	4.30	4.41	4.45	4.85	5.27	5.42
former USSR							
Production *	4.16	4.16	1.69	1.29	0.91	..	..
Exports	0.29	0.29	0.08	0.27	0.21	..	..
Apparent consumption	3.87	3.87	1.61	1.02	0.70	..	..
NORTH AMERICA							
Production	5.65	5.56	5.93	5.98	6.25	6.23	6.28
Imports	0.59	0.45	0.45	0.55	0.88	0.58	0.58
Exports	0.67	0.69	0.88	0.88	1.06	0.92	0.92
Net trade b/	0.08	0.24	0.43	0.33	0.18	0.34	0.33
Apparent consumption	5.57	5.32	5.50	5.65	6.07	5.89	5.94

a/ At October 1994 session. The Committee's estimates for 1994 and 1995 have been adjusted to make them comparable with the historical (actual) data for 1990-1994.
b/ + = net exports; - = net imports.

Graph 18
Consumption of fibreboard, 1964 to 1994

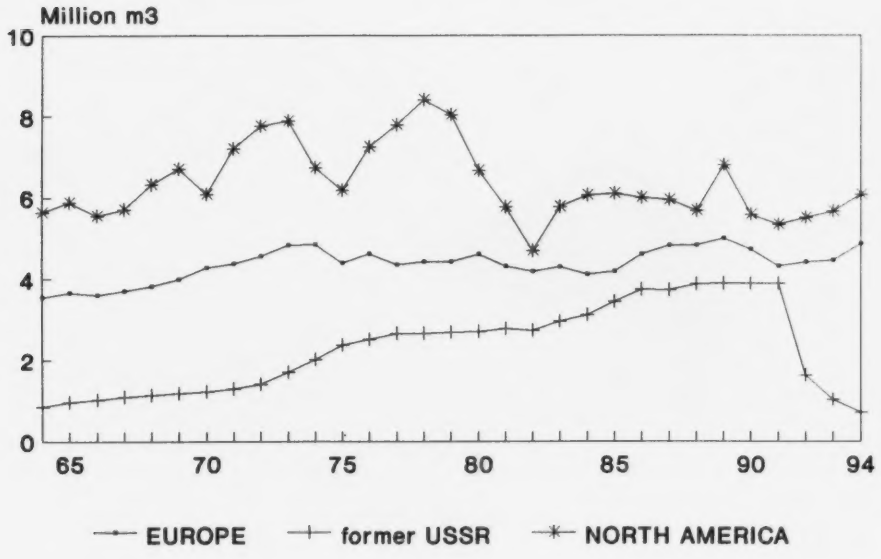
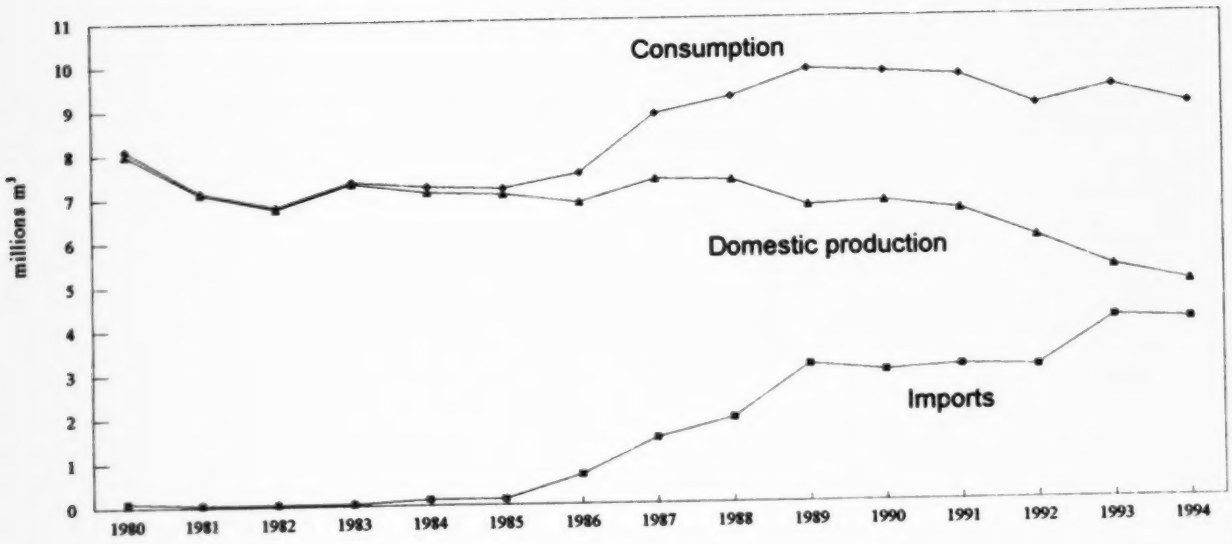


Table 23
Production and trade of fibreboard, 1991 to 1994

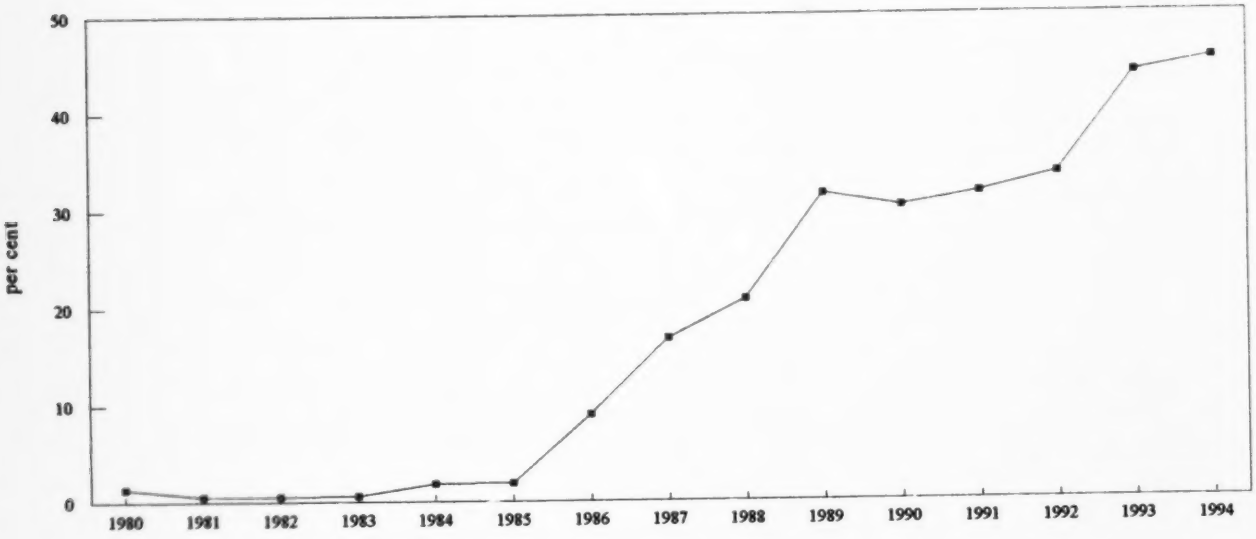
	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994 Volume	Change 1993 to 1994 Percent
			(1000 m3)			(%)
PRODUCTION						
EUROPE :						
Hardboard a/	3317	3289	3783	4347	564	14.9
Insulating board	887	775	748	767	20	2.6
Total	4204	4064	4531	5114	584	12.9
of which :						
Germany	576	588	684	854	170	24.9
Spain	360	400	480	550	70	14.6
Poland	510	472	464	521	57	12.3
France	290	425	450	520	70	15.6
United Kingdom	180	156	318	400	82	25.8
Portugal	325	300	290	...	...	...
Romania	283	263	263	...	...	...
Italy	250	250	240	207	-33	-13.8
Norway	165	157	184	194	10	5.4
Other countries	1265	1052	1158	1315	157	13.6
former USSR	4160	1686	1290	912	-378	-29.3
Canada	683	672	750	827	77	10.3
United States	4882	5254	5231	5421	190	3.6
North America	5565	5926	5981	6248	267	4.5
EXPORTS						
EUROPE :	1875	1944	2182	2589	407	18.7
of which :						
Italy	184	209	361	427	66	18.3
Germany	202	217	212	324	112	52.8
France	285	273	248	311	63	25.3
Spain	180	211	304	273	-31	-10.3
Portugal	159	256	239	...	...	...
Poland	245	100	130	...	...	...
Other countries	619	679	687	885	198	28.8
former USSR	288	75	266	213	-53	-19.9
Canada	234	274	253	359	106	42.0
United States	460	605	625	700	75	12.0
North America	694	879	878	1059	181	20.6
IMPORTS						
EUROPE :	1975	2288	2104	2330	226	10.7
of which :						
Germany	314	346	330	403	73	22.1
United Kingdom	348	391	374	341	-33	-8.8
Netherlands	259	219	207	249	42	20.3
Italy	184	220	206	229	23	11.2
Belgium-Luxembourg	120	162	140	...	...	...
Spain	78	132	114	125	11	9.6
Other countries	671	818	733	843	110	15.0
Canada	131	147	186	177	-9	-4.8
United States	322	304	363	706	343	94.5
North America	453	451	549	883	334	60.8

a/ Including medium density fibreboard.

Graph 19
Japanese plywood, 1980 to 1994



Graph 20
Japanese plywood: imports as a per cent of consumption, 1980 to 1994



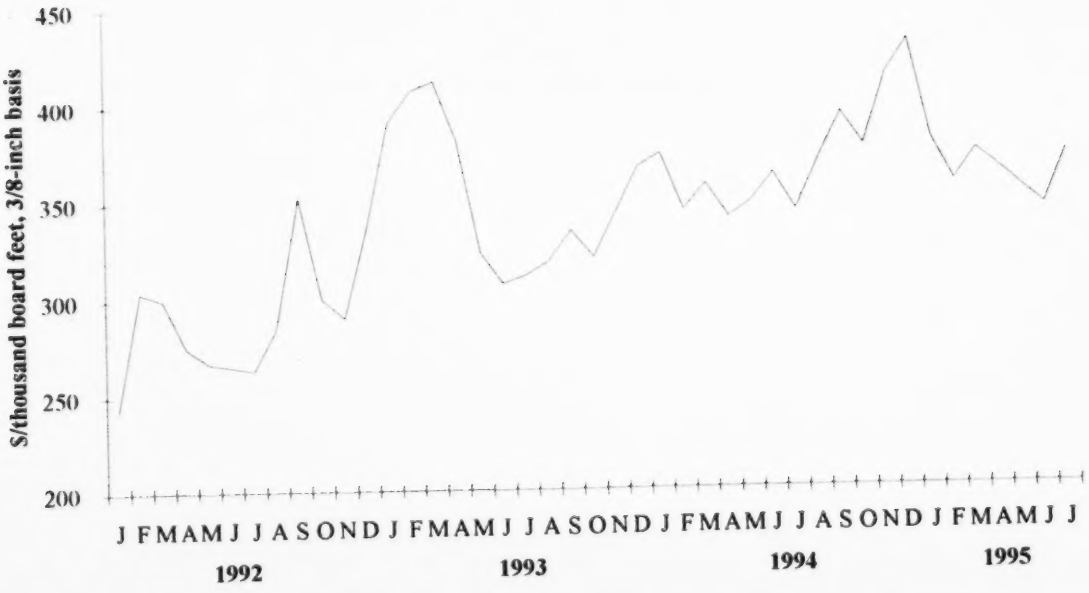
The Indonesian success was based largely on low costs of labour and for wood from natural forests. Japanese plywood manufacturers, like those in other Asian countries, turned to logs from other sources, including Papua New Guinea, Russia, New Zealand and Chile. In 1994, against a background of a weak Japanese housing market, high stocks and competition from other products (MDF, OSB, etc.), Japanese plywood consumption was about 9 million m^3, consisting of 4.9 million m^3 domestic production (down by 6.8% from 1993) and 4 million m^3 imports (down by 1% from 1993). Among importers, supplies from Indonesia fell by 6.2%, but those from all other sources, especially the second largest, Malaysia, rose. This was because of resentment of the marketing tactics of the Indonesian marketing organization APKINDO, which attempted unsuccessfully in the first half of 1994 to increase prices under weak market conditions. Brazilian exports of plywood also set lower price levels on European markets, leading to a rapid downward movement for Indonesian plywood, which was said to be selling below cost at times.

Plywood prices on the Japanese market in summer 1995 are still rather weak (after a temporary rise due to the aftermath of the Kobe earthquake). Imports for January to April 1995 were 6% down on the same period of 1994, but imports by Indonesia were down 24% (although they still accounted for nearly 70% of the total) and a very strong increase of Malaysian plywood imports. (Note: a graph of Japanese plywood prices appears in Section F).

Plywood consumption rose slightly in 1994 in Europe and North America, up by 2.2% and 2.9% respectively, but fell in the former USSR, by 48% on low volumes (table 24 and graph 21). European imports of plywood rose in 1994 by 5.0% (table 25). European plywood production rose by 4.6%, with an increase of nearly 13% in the largest producer, Finland, whose exports rose by nearly 16%. In early 1995, the EU GSP (generalized system of preferences) quota system for plywood, much criticised in the past for distortion of the timing and direction of trading, was replaced by a tariff based system.

In summer 1995, markets for structural panels, i.e., plywood and OSB, in North America were weak, with prices as shown by the composite index for structural panels published by *Random Lengths Exports*, down from their peak in late 1994 (graph 22).

Graph 22
North American composite structural panel prices, 1992 to 1995


450
400
350
300
250
200
$/thousand board feet, 3/8-inch basis
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J
1992
1993
1994
1995

Source: *Random Lengths Export.*

Table 24
Plywood balance in Europe, the former USSR and North America, 1990-1994
(million m^3)

	1990	1991	1992	1993	1994 (prelim.)	Timber Committee estimates a/	
						for 1994	for 1995
EUROPE							
Production	3.45	3.01	2.98	3.30	3.45	3.46	3.62
Imports	4.68	4.29	4.59	4.42	4.64	4.33	4.50
Exports	1.69	1.53	1.57	1.72	1.96	1.69	1.84
Net trade b/	-2.99	-2.76	-3.02	-2.70	-2.68	-2.64	-2.66
Apparent consumption	6.44	5.77	6.00	6.00	6.13	6.10	6.28
former USSR							
Production	1.74	1.55	1.50	1.25	1.06	1.13	1.15
Imports	0.02	0.01	0.16	0.16	0.18	0.16	0.16
Exports	0.36	0.24	0.26	0.58	0.81	0.60	0.61
Net trade b/	0.34	0.23	0.10	0.42	0.63	0.44	0.45
Apparent consumption	1.40	1.32	1.40	0.83	0.43	0.69	0.70
NORTH AMERICA							
Production	21.00	18.44	18.95	18.92	19.33	19.27	19.00
Imports	1.72	1.60	1.89	1.92	1.84	1.90	1.90
Exports	1.95	1.66	2.03	1.98	1.76	1.93	1.97
Net trade b/	0.23	0.06	0.14	0.06	-0.08	0.03	0.07
Apparent consumption	20.77	18.38	18.81	18.86	19.41	19.24	18.93

a/ At October 1994 session. The Committee's estimates for 1994 and 1995 have been adjusted to make them comparable with the historical (actual) data for 1990-1994.
b/ + = net exports; - = net imports.

Graph 21
Consumption of plywood, 1964 to 1994

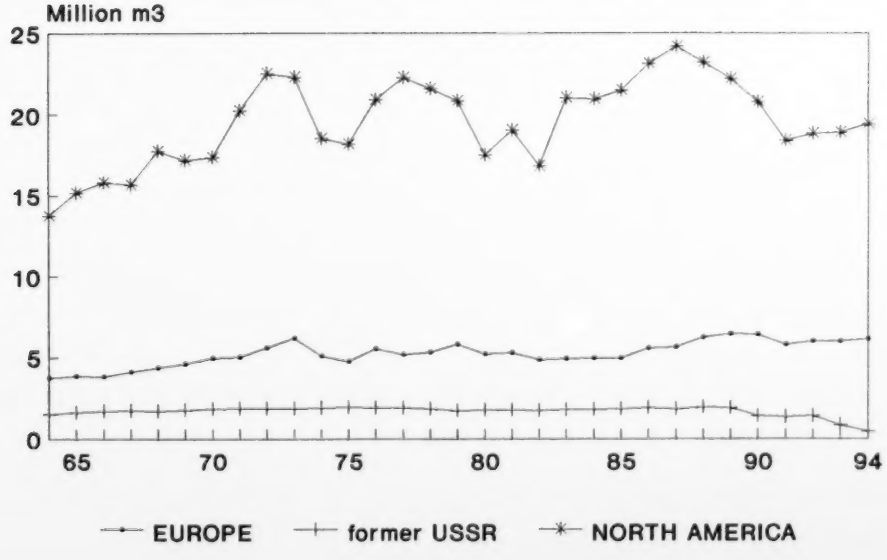


Table 25
Production and trade of plywood, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
PRODUCTION						
EUROPE :	3013	2979	3299	3450	151	4.6
of which :						
Finland	477	462	621	700	79	12.7
France	470	484	460	485	25	5.4
Italy	450	427	415	427	12	2.9
Germany	424	429	416	416	-	-
Spain	140	120	200	210	10	5.0
Austria	140	150	150	150	-	-
Poland	111	132	133	143	10	7.5
former Czechoslovakia	157	87	95	105	10	10.5
Sweden	67	55	73	85	12	16.4
Turkey	65	74	77	77	-	-
Other countries	511	559	659	652	-7	-1.1
former USSR	1548	1500	1250	1060	-190	-15.2
Canada	1927	1838	1824	1834	10	0.5
United States	16508	17109	17093	17500	407	2.4
North America	18435	18947	18917	19334	417	2.2
EXPORTS						
EUROPE :	1525	1570	1723	1962	239	13.9
of which :						
Finland	347	348	542	627	85	15.7
France	222	228	252	250	-2	-0.8
Austria	130	119	129	158	29	22.5
Germany	81	122	110	131	21	19.1
Italy	95	90	104	108	4	3.8
Other countries	650	663	586	688	102	17.4
former USSR	361	240	432	508	76	17.6
Canada	299	201	408	413	5	1.2
United States	1050	1374	1556	1484	-72	-4.6
North America	1349	1575	1964	1897	-67	-3.4
IMPORTS						
EUROPE :	4294	4588	4418	4637	219	5.0
of which :						
United Kingdom	1271	1397	1157	1202	45	3.9
Germany	664	879	865	967	102	11.8
Netherlands	619	583	612	560	-52	-8.5
Belgium-Luxembourg	385	300	436	...	...	..
France	414	423	341	304	-38	-11.1
Italy	204	216	241	257	16	6.6
Other countries	738	790	765	912	147	19.2
Canada	262	242	288	...	...	...
United States	1338	1649	1630	1547	-83	-5.1
North America	1600	1891	1918	1835	-83	-4.3

E. Woodpulp, pulpwood and paper and paperboard

This section analyses trends on markets for pulpwood, preceded by a brief discussion of developments for pulp and paper, which clearly play a determinant role in demand for pulpwood. It should be borne in mind that, in the standard ECE/FAO terminology, "pulpwood" refers to all wood to be used as raw material for the manufacture of pulp, particle board and fibreboard (i.e., not only pulp). "Pulpwood" includes both "pulpwood, round and split" (or "round pulpwood"), which may be either coniferous or non-coniferous and "residues, chips and particles", a by-product of the sawmilling and plywood industries.

(i) Paper and paperboard

In 1994, production and consumption of paper and paperboard continued to expand strongly in Europe and North America (table 26 and graph 23). In 1994, European production of paper and paperboard was 7.2% higher than in 1993, and in North America 4.8% higher. In Europe, above average growth rates were recorded in some of the largest paper producers, including Italy (+11.4%), Germany (+10.9%), Finland (+9.2%) and France (+8.8%).

The strong demand led to higher prices, notably for newsprint, whose price, in the eastern United States, rose from just over $400/ton in mid-1994 to a record of nearly $700/ton in June 1995. The extent and speed of this price increase, which was world-wide, as the newsprint market is effectively global, has caused problems for purchasers, leading to page limitations, increase in cover price for some newspapers, and technical measures to economise newsprint (reduced roll width). Some closures of newspapers have been attributed to higher newsprint prices. In fact, according to the Canadian Pulp and Paper Association, newsprint consumption by United States daily newspapers (a major determinant of conditions on world newsprint markets), which had risen steadily through 1994 to a peak of 9.68 (thousand tons at a seasonally adjusted annual rate) in November 1994, then fell sharply, to 8.89 in May 1995, a drop of 8.2% in 6 months.

Nevertheless, the percentage rise (1994 over 1993) in the volume of production of newsprint (+4.8% in Europe and +1.3% in North America) was considerably less than that for other types of printing and writing paper, which recorded a growth rate between 1993 and 1994 of 9.6% in Europe and 5.5% in North America. In western Europe (members of CEPI, the Confederation of European Paper Industries), there were sharp differences in growth rates between grades, with growth around or over 10% for uncoated woodfree, coated paper, case materials and folding boxboards, and low (even slightly negative growth) for sanitary and household grade and several wrapping and packaging grades.

Data for the first part of 1995 show continued vigorous growth in production of paper and paperboard, for western Europe (+8.1% in CEPI countries in the first quarter), the United States (+ 5.3%) and Japan (+6.1%) and rather slower growth in Canada (+2.0%).

(ii) Woodpulp

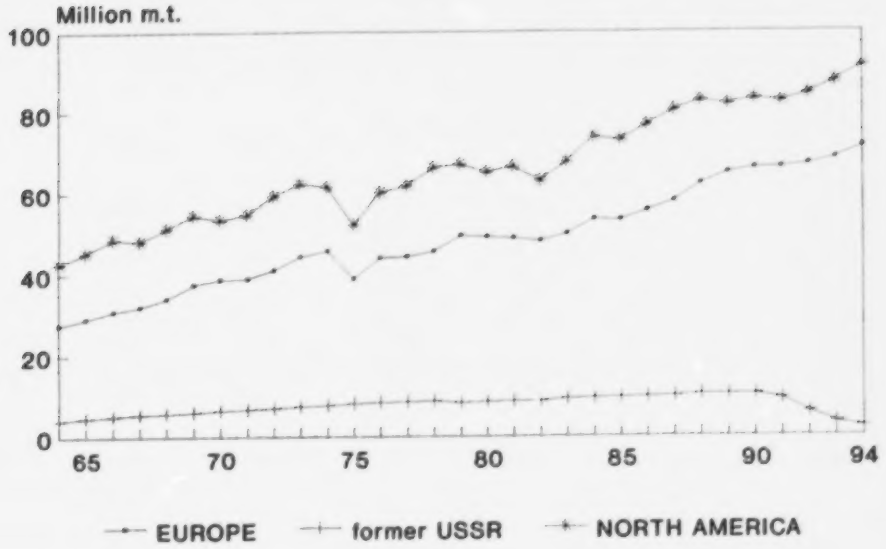
This sustained demand was carried over into the markets for pulp, which were very lively all through 1994 and in 1995. Capacity for market pulp was insufficient to meet the demand and stocks were low, leading to a large and rapid rise in pulp prices, which had consequences throughout the forest products sector. In summer 1995, prices for the indicator grade (NBSK or Northern Bleached Softwood Kraft) were well over $900/ton and one leading supplier has announced a rise to $1000/ton towards the end of the year. Prices have more than doubled (in dollar terms) since the low point at the end of 1993, i.e., in less than 18 months. The market pulp sector is running at full capacity everywhere and profits are high, partly compensating for the difficult years of the early 1990s.

The relationship between prices for pulp and for waste paper has continued to be important but has been working in a different way than previously. In 1993, oversupply of waste paper helped push pulp prices downward: in 1995, the strong pulp prices are pulling up those of waste paper, which have more than doubled in some areas. In the first months of 1995, this strength of the pulp sector has coincided with incipient weakness in the sawnwood markets (see above) further tilting the balance of commercial power in the sector, from the log-using to the pulpwood-using industries (which include particle board, MDF and OSB as well as pulp).

Table 26
Production of paper and paperboard in Europe and North America, 1991 to 1994

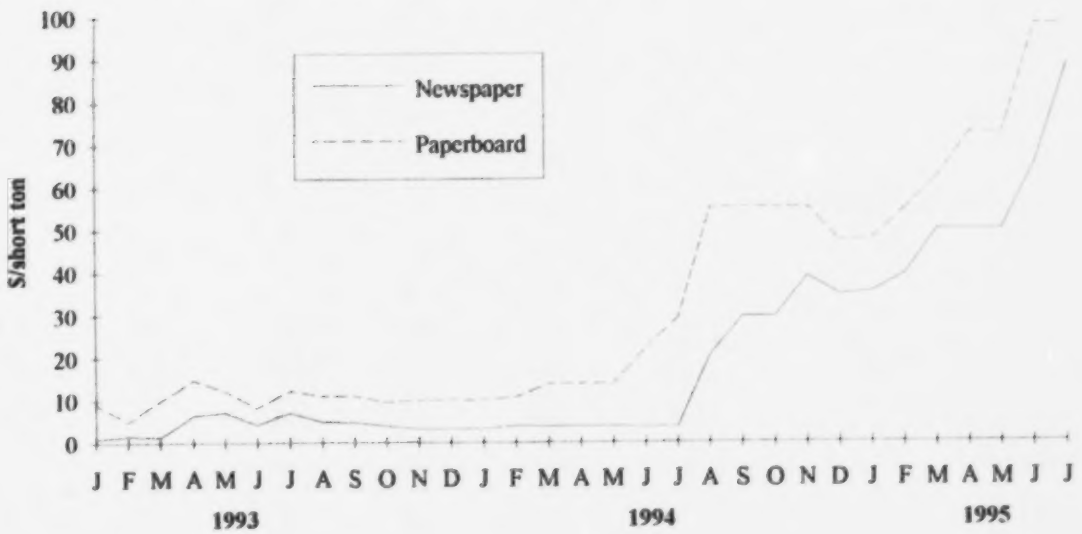
	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994 Volume	Change 1993 to 1994 Percent
			(1000 m.t.)			(%)
NEWSPRINT						
EUROPE :	8447	8770	9403	9927	524	5.6
of which :						
Sweden	2063	2124	2325	2415	90	3.9
Germany	1229	1222	1302	1499	197	15.1
Finland	1305	1257	1425	1446	21	1.5
Norway	955	934	1007	...	...	...
France	509	669	802	844	42	5.2
United Kingdom	672	700	741	769	28	3.8
Other countries	1714	1864	1801	1947	146	8.1
Canada	8977	8931	9136	9312	176	1.9
United States	6206	6424	6505	6527	22	0.3
North America	15183	15355	15641	15839	198	1.3
Japan	3515	3255	2917	...	...	...
OTHER PRINTING AND WRITING PAPER						
EUROPE :	24236	24937	25662	28447	2785	10.9
of which :						
Finland	4778	5045	5567	6159	592	10.6
Germany	5114	5173	4928	5865	937	19.0
France	2827	2948	2936	3268	332	11.3
Italy	2252	2397	2381	2595	214	9.0
Sweden	1793	1805	1884	2060	176	9.3
United Kingdom	1478	1583	1675	1819	144	8.6
Other countries	5994	5986	6291	6681	390	6.2
Canada	3564	3567	4194	4445	251	6.0
United States	19872	20281	21829	23010	1181	5.4
North America	23436	23848	26023	27455	1432	5.5
Japan	9730	9610	9543	...	...	...
OTHER PAPER AND PAPERBOARD						
EUROPE :	35551	36729	38241	40213	1972	5.2
of which :						
Germany	6561	6819	6804	7093	289	4.2
Sweden	4493	4449	4572	4808	236	5.2
France	3854	4073	4237	4369	132	3.1
Italy	3347	3542	3555	3956	401	11.3
Finland	2693	2845	2998	3304	306	10.2
United Kingdom	2801	2869	2990	3241	251	8.4
Other countries	11802	12133	13085	13442	357	2.7
Canada	4018	4087	4198	4585	387	9.2
United States	46646	48456	48833	51374	2541	5.2
North America	50664	52543	53031	55959	2928	5.5
Japan	15811	15459	15304	...	...	...

Graph 23
Consumption of paper and paperboard
1964 to 1994



Graph 24

Recovered paper prices in the United States, 1993 to 1995



Average prices paid by dealers and recycling centers in 6 major United States cities
Source: *The Paper Stock Report*, McEntee, January 1993-June 1995

United States recovered paper prices appear to have skyrocketed during the 12 months since July 1994 (graph 24), but in fact they have only surpassed their 1980s levels of $40 to $60/short ton and are now comparable to European prices. The glut of recycled paper and paperboard, from 1989 to 1994, was due to a combination of weak markets and an extreme oversupply of recovered paper as legislated community recycling programmes went from 400 in 1989 to 4000 in 1994.

The price jumps resulted from interrelated factors, including a shortage of recovered paper and paperboard created when the momentum of economic recovery accelerated demand. Over the same 5-to-6-year period, the share of the United States papermills which had recycling capacity, increased from 40% to 80%.

Europe's *pulp* production rose 4.1% in 1994, with above average increases in Finland (+6.7%), Austria (+9.8%) and France (+9.7%) (table 27). Spain recovered some of the ground lost in earlier years. In Germany, however, Europe's fifth largest producer, despite the 10% increase in paper production, pulp production fell for the third successive year, presumably because of closing down of obsolete and polluting capacity in the new *Länder*, and the difficulty in carrying out pulp operations with adequate economies of scale within the environmental constraints which exist in Germany. Probably, the most important factor, however, is waste paper, which is the dominant raw material for paper making in Germany; its consumption is rising faster than that of all other raw materials (+17%, moving from 54% of the total in 1993 to 56% in 1994). Consumption of fillers also rose faster than paper production, by 16% to 18% of raw material consumption (source: VDP, the German Paper Millers Federation). Despite the rise in 1994, Europe's pulp production was still below the level of 1990.

It is worth pointing out that increasingly Europe's pulp production capacity is concentrated in a few "specialised" countries. Sweden and Finland each produce around 10 million m.t. per year, accounting between them for 55% of a European total of just over 36 million m.t. Eight European countries produce over 1 million m.t. of pulp a year (Sweden and Finland plus, in descending order of magnitude, France, Norway, Germany, Austria, Portugal and Spain). Together these eight countries account for no less than 87% of Europe's pulp production. There is also concentration at a commercial level, as some of the largest mills outside the Nordic countries are owned by Nordic companies or have significant Nordic participation.

In North America, pulp production rose faster than in Europe, by 7% to 24.8 million m.t. in Canada and by 3% to 60.3 million m.t. in the United States, to new record levels, influenced by the same global factors.

In Russia, however, production of pulp fell by nearly a quarter, to 3.8 million m.t. This may be compared to over 11 million m.t. in 1989 (in the former USSR). The main problems seem to be supply bottlenecks, including infrastructure problems, shortages of parts and lack of proper trade financing arrangements.

(iii) Markets for pulpwood

Because of the strong demand for both pulp and panels (notably MDF, OSB and particle board), accompanied by high production levels and prices, demand was strong for pulpwood in both Europe and North America. No statistical data are available for real consumption of pulpwood, but the estimates of "derived requirements" demonstrate this trend clearly, with rises of around 4.5% in both regions (table 28). Derived requirements are estimated by applying standard input/output conversion factors to the figures for production. However, in Europe, the 1994 level (192.7 million m^3 EQ) had not yet recovered that of 1990 (194.1 million m^3 EQ), whereas in North America the 1994 estimate is over 10% above that for 1990. In Europe, growth in pulpwood requirements was below average in the largest single user, Sweden (table 29).

European pulpwood removals rose, to 109 million m^3, an increase of 4.1%, which is less than that of requirements. This applies to the major pulpwood consuming countries, for which the change from 1993 to 1994 was as follows (in million m^3):

	Requirements	Removals
Sweden	+0.5	-0.6
Finland	+2.5	+1.7
Germany	+1.1	+0.3
France	+1.3	+1.3
Europe	+8.6	+4.4

Table 27
Production of woodpulp in Europe and North America, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m.t.)			(%)
MECHANICAL WOODPULP						
EUROPE :	12157	11748	12042	12421	379	3.1
of which :						
Finland	3156	3170	3401	3631	230	6.8
Sweden	2709	2525	2722	2858	136	5.0
Norway	1293	1217	1418	1516	98	6.9
Germany	1531	1468	1331	1236	-95	-7.1
Other countries	3468	3369	3170	3180	10	0.3
Canada	10630	10243	10588	10838	250	2.4
United States	5810	5898	5586	5640	54	1.0
North America	16440	16141	16174	16478	304	1.9
Japan	2091	1861	1644	...	...	...
CHEMICAL WOODPULP a/						
EUROPE :	23313	22766	22990	24061	1071	4.7
of which :						
Sweden	7060	7065	7231	7239	8	0.1
Finland	5349	5371	5937	6331	394	6.6
France	1624	1806	1717	1901	184	10.7
Portugal	1619	1592	1518	...	...	...
Spain	1378	1434	1243	1338	95	7.6
Austria	1111	1112	1078	1196	118	10.9
former Czechoslovakia	1066	768	873	997	125	14.3
Norway	815	789	749	828	79	10.5
Germany	855	807	788	804	16	2.0
Other countries	2435	2022	1857	1910	53	2.9
Canada	12678	12618	12548	13917	1369	10.9
United States	53086	53382	52935	54614	1679	3.2
North America	65764	66000	65483	68531	3048	4.7
Japan	9651	9333	8946	...	...	...

a/ Including semi-chemical woodpulp and dissolving grades.

Table 28
Derived pulpwood requirements in Europe and North America
1991to 1994

	1991	1992	1993	1994 (prelim.)
		(million m3 EQ) a/		
EUROPE				
Mechanical woodpulp	30.39	29.12	29.73	30.66
Semi-chemical woodpulp	4.75	4.81	4.48	4.33
Chemical woodpulp b/	104.30	101.90	103.52	108.90
Particle board	39.05	37.54	38.29	39.65
Fibreboard	7.57	7.31	8.16	9.21
Total	186.06	180.68	184.18	192.75
Change on previous year				
- Volume		-5.38	3.50	8.57
- Percent		-2.9	1.9	4.7
NORTH AMERICA				
Mechanical woodpulp	41.10	40.35	40.44	41.20
Semi-chemical woodpulp	12.63	12.69	12.22	12.48
Chemical woodpulp b/	295.45	296.49	294.76	308.99
Particle board	20.77	24.17	25.93	27.35
Fibreboard	10.02	10.67	10.77	11.25
Total	379.97	384.37	384.12	401.27
Change on previous year				
- Volume		4.40	-0.25	17.15
- Percent		1.2	-0.1	4.5

a/ Equivalent volume of wood in the rough, calculated from data on production of pulp and panels, using the following conversion factors :

Mechanical woodpulp : 1 m.t. = 2.5 m3 EQ
Semi-chemical woodpulp : 1 m.t. = 3.0 m3 EQ
Chemical woodpulp
(incl. dissolving) : 1 m.t. = 4.8 m3 EQ
Particle board : 1 m3 = 1.4 m3 EQ
Fibreboard : 1 m3 = 1.8 m3 EQ

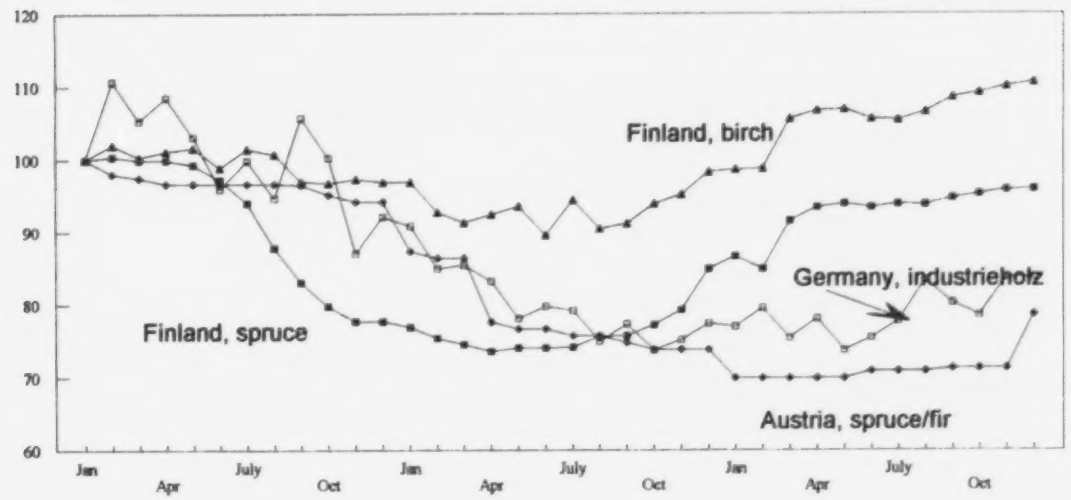
b/ Including dissolving pulp.

Table 29
Derived pulpwood requirements in selected countries
1991to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(million m3 EQ) a/			(%)
Sweden	41.68	40.83	42.11	42.63	0.52	1.2
Finland	33.52	33.56	36.97	39.47	2.50	6.8
Germany	19.26	18.90	19.48	20.58	1.09	5.6
France	13.82	15.27	14.35	15.61	1.26	8.8
Spain	10.14	10.07	9.20	9.85	0.65	7.1
Austria	8.81	8.69	8.52	9.28	0.76	9.0
Portugal	9.46	9.06	8.61	...	...	...
Norway	7.86	7.53	7.77	8.50	0.73	9.4
former Czechoslovakia	6.39	4.64	5.49	6.18	0.69	12.6
Poland	5.24	5.46	5.75	5.90	0.15	2.5
Canada	91.48	91.44	93.11	101.22	8.11	8.7
United States	288.49	292.93	291.01	300.03	9.02	3.1

a/ Equivalent volume of wood in the rough calculated from data on production of pulp and paper using the conversion factors given in the footnote a/ to previous table.

Graph 25
Selected pulpwood prices in Europe, 1992 to 1994



Source: *Timber Bulletin*, Vol. XLVIII (1995) No.1
and *Preise und Preisindizes für die Land- und Forstwirtschaft*, Statistisches, Bundesamt, June 1995

There appear to be two explanations for the difference in trends between pulpwood requirements and domestic removals. In the first place, the high levels of production in the sawmilling industry will certainly have made available large volumes of residues (although there are no reliable short-term statistics on this). Secondly, imports from outside Europe have increased although, once again, no precise statistical information is available, due to the loss of the pulpwood/sawlog distinction in international trade statistics.

Sweden still publishes statistics on trade in pulpwood which confirm the explanation above. In 1994, they rose by 57% (about 2 million m^3), to 5.7 million m^3. Latvia and Russia were the largest suppliers (about 1.3 million m^3 each, mostly non-coniferous, i.e., birch) and other non-European countries, including Brazil and Argentina exported pulpwood, presumably non-coniferous (eucalyptus), to Sweden.

The trade in wood residues, chips and particles expanded in all areas of the ECE region in 1994 (table 30). Exports increased from Europe, by 12.9% to 7.7 million m^3, aided by countries such as Germany, where sawmills simultaneously produced record volumes of sawnwood and residues; by-products were exported when domestic pulp and panel needs did not consume them. Canada became a net importer of residues and chips as the pulp and paper industry ran at 95% capacity.

During 1994, pulpwood prices stopped falling everywhere in Europe and rose on some markets. In the graph, the rise in Finnish pulpwood prices in 1994 is very clear, as is the much stronger state of demand for birch pulpwood than for coniferous (graph 25). In fact, non-coniferous pulpwood is at a premium world-wide. Data for the beginning of 1995 show a further rise in pulpwood prices, for instance in central Europe, including Germany, where prices have been rising since mid-1994. In March 1995, prices for *industrieholz* (essentially pulpwood), were 15% higher than for March 1994.

There have been similar trends in North America. In the United States too, pulpwood removals rose, to a new record level of 151.4 million m^3, but the rate of increase (1%) was lower than that for requirements (3.1%), apparently because of the good supply of chips from the high level of sawmilling activity. However in 1995, the situation has changed, with the downturn in the sawnwood market reducing availability of chips.

In mid-1995, British Columbia (whose pulp industry is dependent to a large extent on chips as a raw material) is experiencing an acute chip shortage, as high demand for pulp coincides with problems for the sawmilling industry: pulpwood (in the form of logs and/or chips) is being imported from Alaska and Alberta in large quantities, causing some resentment and raising prices. Companies which cannot supply their own needs for chips have even taken over companies with a structural chip surplus in order to safeguard supplies.

In the southeast United States, pulpwood prices are said to have doubled between May 1994 and spring 1995, going from $30 to $60 a cord (2.55 m^3). The high cost of sawlogs has also constrained sawnwood production, and thereby availability of chips.

In Japan, domestic supply of pulpwood in 1994, mostly in the form of chips, fell 8% to 13.3 million m^3, but this was counterbalanced by a 6% rise in imports, to 22.09 million m^3 (62% of consumption). The most important suppliers were the United States with 8.28 million m^3 (+6%), Australia with 5.62 million m^3 (+14%) and Chile, with 3.03 million m^3 (+6%). Canadian exports to Japan fell by 28% to just under 1 million m^3. As a consequence of the tight supply position for pulpwood, chip prices to Japan are rising. For instance, the principal shipper, Weyerhaueser, announced a rise of $5.50 to $123.50 per BDU (bone dry unit) for first quarter 1995 shipments.

F. Developments in forest products markets in Japan

Forest products markets are increasingly global in nature and each section of the *Review* has referred as appropriate to developments outside the ECE region, especially Japan and southeast Asia. At the risk of repetition, this new section presents systematically, but without excessive detail, the major trends in the Japanese market.

Table 30
Exports and imports of wood residues, chips and particles, 1991 to 1994

	1991	1992	1993	1994 (prelim.)	Change 1993 to 1994	
					Volume	Percent
			(1000 m3)			(%)
EXPORTS						
EUROPE	6614	7196	6781	7657	876	12.9
of which :						
Germany	2448	2653	2272	2455	183	8.1
Austria	456	541	1060	1542	482	45.5
France	1297	1403	948	994	46	4.9
former Czechoslovakia	-	-	528	665	137	25.9
Netherlands	521	501	366	417	51	13.9
Belgium-Luxembourg	495	465	310	...	...	...
Ireland	167	317	291	254	-37	-12.7
Sweden	308	334	295	242	-53	-18.0
Finland	210	176	217	184	-33	-15.2
Switzerland	70	80	91	134	43	47.3
Other countries	642	726	403	460	57	14.2
former USSR	801	423	797	995	198	24.8
Canada	1385	1264	1177	1105	-72	-6.1
United States	9350	8753	6893	7523	630	9.1
North America	10735	10017	8070	8628	558	6.9
IMPORTS						
EUROPE	6678	7862	7741	9978	2237	28.9
of which :						
Austria	906	1006	2068	3023	955	46.2
France	735	966	811	1230	419	51.7
Italy	633	709	687	1088	401	58.4
Sweden	699	784	508	769	261	51.4
Finland	477	761	657	745	88	13.4
Germany	1096	1027	712	732	20	2.8
Switzerland	493	589	611	662	51	8.3
Belgium-Luxembourg	782	824	543	...	...	...
Norway	268	347	382	453	71	18.5
Netherlands	346	348	250	265	15	6.0
Other countries	243	501	511	468	-43	-8.5
Canada	243	605	588	1191	603	102.6
United States	1343	888	1389	993	-396	-28.5
North America	1586	1493	1977	2184	207	10.5
Japan	22788	22080	21911	...	...	...

Housing starts in *Japan* totalled 1.57 million in 1994, up 5.7% from 1993. Starts for wooden houses accounted for 45.9% of the total and 55.5% of the total floor space. Housing starts for 1995 were expected to be down 5.7% to 1.43 million in fiscal year 1995 (April 1995 to March 1996) according to the Institute for Construction Economy. In April 1995, the Ministry of Construction further reduced the forecast of 1995 housing starts to 1.35 million and some experts have suggested that 1.3 million might be more realistic.

Japanese sawnwood imports increased slightly in volume in 1994, by 1.3% over 1993, but by 6.7% in value, as a result of higher sawnwood prices (table 31). Sawnwood imports continue to advance at the expense of logs; only 5 million m^3 of sawnwood were imported in 1985, and this doubled, to 10.8 million m^3, a decade later in 1994. Imports from the main sources, North America and southeast Asia, fell slightly in volume in 1994, but advanced in value. The largest increase in sawnwood imports came from Europe, which more than doubled to 591,000 m^3, or by 127%, from a relatively low base of 260,000 m^3. Together, Sweden and Finland exported 558,150 m^3 of coniferous sawnwood to Japan in 1994. Sawnwood imports, principally radiata pine, from New Zealand increased 7.3% to 252.200 m^3 while those of Chile decreased 23.6% to 304.200 m^3.

Also increasing in imports in 1994 were value-added products like laminated veneer lumber (LVL), up 50% to 26,192 m^3 over 1993, glulam beams, up 50% to 89,487 m^3 over 1993, fingerjointed material and edge-glued panels.

Japan's sawmills decreased in number by 98, or 2%, in 1994. These were mostly small and medium-sized mills, but from the 1974 high of 23,000 mills, the number was 15,000 at the end of 1994. The reason for this decrease is the relatively low price of imported sawnwood, even with the protective tariffs, and the rising price of imported sawlogs. Plywood mills decreased by 2, or 4%, in 1994. Plywood production was down 8.8% to 720 million cubic meters as imports and other panel types were substituted.

Japanese log imports continued to shrink due to reduced availability coupled with higher prices (table 32). The drop in log imports, mostly tropical, from 32 million m^3 in 1989 was 30.0% to 22.4 million m^3 in 1994. In 1994, the biggest drops over 1993 concerned from North America and the Asia Pacific regions, down 6.6 and 7.3% in volume and 8.0 and 21.5% in value respectively. Russian log exports to Japan decreased by 3.4% to 4.8 million m^3 while the relatively small sawnwood exports increased (see sawnwood import table). In compensation, increased logs came from Europe, Africa and Latin and South America. Japan imported 292,212 m^3 of coniferous logs from Europe in 1994, with the majority coming from Finland. Log imports from New Zealand increased by 8.5% in 1994 to 1.9 million m^3, while Chile's log exports to Japan fell by 41.3% to 0.1 million m^3.

Because of the downturn in construction, Japan expects to import less timber in 1995. Coniferous sawnwood and logs from Chile and New Zealand are expected to increase, Russian volumes are forecast to stay the same and both North American coniferous timber and southeast Asia non-coniferous timber are forecast to decline. The Japanese Lumber Importers Association estimates timber imports to increase 11.3% over 1994 to 29.4 million m^3 logs and sawnwood in 1995. Many of the logs are peeled for plywood and the Japan Plywood Manufacturers Association estimates total 1995 production will be 4.3 million m^3, of which 645,000 m^3 of coniferous plywood production. The increasing manufacture of totally coniferous or coniferous-core plywood is a trend which will receive a boost if construction codes are changed to allow its use in concrete forming.

Prices of imported logs and sawnwood from Russian and North American sources moved slightly lower in June and July 1995. One North American company reduced prices of hemlock squares by about 12% to \$1050/mbf (\$445/m^3) as Japanese inventories rose and demand weakened. Daljes, a Russian export company, reduced log prices by 4 to 9%, to \$128/m^3 for whitewood, \$124/m^3 for larch and \$127/m^3 for red pine; log imports decreased as inventory levels remain high and production slowed corresponding to weakening domestic consumption.

The strengthening yen, which leapt up by 17% against the dollar from January to June 1995, has made imports of sawnwood more affordable but conversely has hurt Japanese exports. At mid-year 1995, the strong yen may have been the reason that a slowing of the Japanese economy took place as evidenced by rising unemployment and eroding consumer confidence. The surge in the value of the yen gave additional incentive for Japanese forest products companies to expand operation overseas.

Table 31
Japanese sawnwood imports, 1993 to 1994

	Volume (1000 m^3)		% change	Value (in million US$)		% change
	1993	1994		1993	1994	
North America	7,774	7,639	-1.7	2,903	3,004	3.5
Russian Federation	288	352	22.2	59	77	30.4
Asia Pacific	2,277	2,155	-5.3	1,189	1,239	4.2
Europe	260	591	127.0	86	202	135.2
Africa	8	3	-64.4	5	1	-79.9
Latin & South America	12	18	47.0	7	10	43.6
Total	10,620	10,758	1.3	4,249	4,534	6.7

Source: *Japan Lumber Journal*, Vol. 36, No. 9, 20 May 1995

Table 32
Japanese log imports, 1993 to 1994

	Volume (1000 m^3)		% change	Value (in million US$)		% change
	1993	1994		1993	1994	
North America	8,195	7,654	-6.6	2,430	2,235	-8.0
Russian Federation	4,973	4,806	-3.4	557	541	-2.9
Asia Pacific	9,652	8,945	-7.3	2,501	1,963	-21.5
Europe	101	298	195.4	19	42	117.7
Africa	505	671	33.0	145	189	29.8
Latin & South America	3	11	235.9	2	4	106.3
Total	23,429	22,386	-4.4	5,656	4,975	-12.0

Source: *Japan Lumber Journal*, Vol. 36, No. 9, 20 May 1995

Adequate stocks in Japan of logs and sawnwood have prevented North American, European and other exporters from capitalizing on their "affordable" timber.

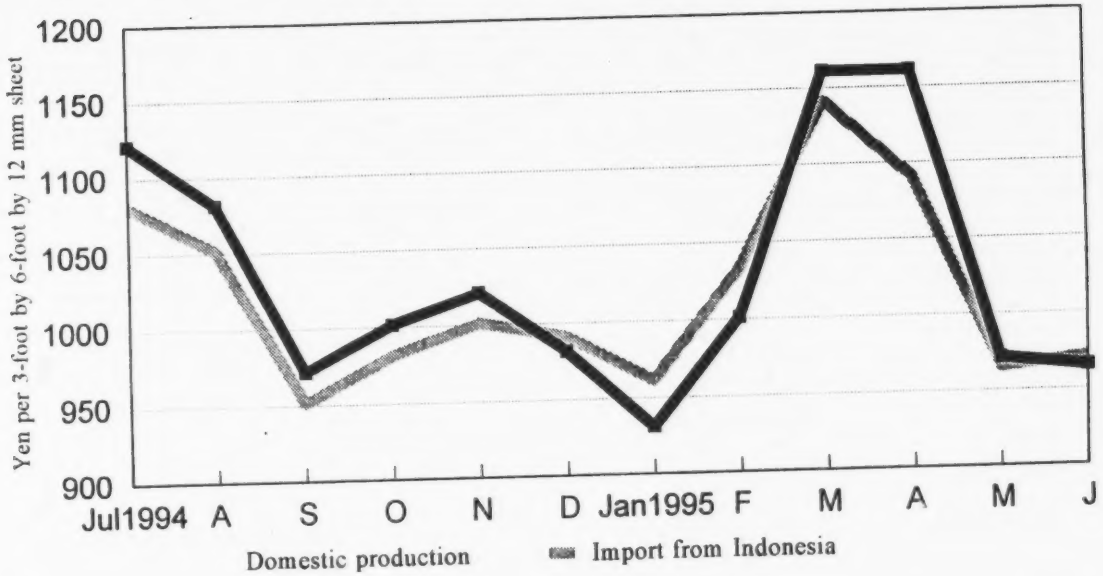
In January 1995, the Great Hanshin Earthquake in Kobe, which measured 7.2 on the Richter Scale, destroyed 74,000 homes, apartment buildings, shops and facilities. The Kobe Port was destroyed, and with 70% of all container trade passing though the port, the timber trade was disrupted; however, by mid-1995, most trade channels had been restored. The result of the devastation was a mobilization of wood and concrete building materials. This had the temporary effect of escalating sawnwood and plywood prices by 1000 to 2000 yen/m^3 and imports from North America increased temporarily (graph 26).

Sawmillers, anticipating the demand for sawnwood for reconstruction, purchased logs and built stocks, but by summer 1995 the demand had not materialized and the oversupplied sawmill industry reduced log purchases, despite their affordability (lowered prices and the strong yen) and sawnwood prices fell to previous levels. Wood homes on the outskirts of Kobe performed well in the earthquake, however, no 2x4 construction is permitted within Kobe due to fire code restrictions.

Changes in 1993 in Japanese construction codes in terms of fire prevention requirements have resulted in the construction of 3-story wooden multi-family apartment houses. In fiscal year 1993 (April 1993-March 1994), 21,804 wood-frame apartments were built.

Graph 26

Japanese plywood prices for concrete forming panels, 1994 to 1995



Source: *Market News Service*, International Trade Centre, July 1995.

ANNEX

Table 1

SAWN SOFTWOOD - SCIAGES RESINEUX

Country	APPARENT CONSUMPTION - CONSOMMATION APPARENTE							Pays
	Total (1000 m3)		Per capita (m3/1000 capita)		Total (1000 m3)			
	1979-81 (average)	1992-94	1979-81 (moyenne)	1992-94	1992	1993	1994	
Albania *	105	94 *	39	28 *	92	95	...	Albanie *
Austria	2469	3469	327	434	3459	3366	3583	Autriche
Belgium-Luxembourg	1245	1777 *	122	170 *	1812	1760	...	Belgique-Luxembourg
Bulgaria	1194	190 *	135	22 *	175	198	...	Bulgarie
Cyprus	119	90	189	125	97	87	85	Chypre
former Czechoslovakia	3057	2098	200	134	1720	2301	2274	ancienne Tchécoslovaquie
Denmark *	1518	2177	296	420	1960	2008	2562	Danemark *
Finland	3016	2544	631	502	2713	2226	2693	Finlande
France	7773	7660	144	133	7555	7197	8229	France
Germany	...	15097	...	186	15379	13892	16021	Allemagne
former G.D.R. *	3098	...	185	...	...	...	...	ancienne R.D.A. *
Germany, Fed. Rep. of	11793	...	192	...	...	...	...	Allemagne, Rép. Féd. d'
Greece	760	593 *	79	57 *	680	549	...	Grèce
Hungary	1302	724	122	70	697	690	786	Hongrie
Iceland	65	85 *	284	324 *	82	87	...	Islande
Ireland	557	692	164	194	675	636	764	Irlande
Israel	234	514 *	60	98 *	478	532	...	Israël
Italy	5286	5293	94	93	5184	5098	5596	Italie
Malta	16	8	48	22	14	5	5	Malte
Netherlands	2257	2689	160	176	2377	2715	2974	Pays-Bas
Norway	2405	2074	589	488	1952	1917	2353	Norvège
Poland a/	5377	2970	151	77	3087	2808	3014	Pologne a/
Portugal	1000	691 *	102	70 *	300	887	...	Portugal
Romania	1491	772 *	67	34 *	646	835	...	Roumanie
Spain	2263	3021	60	77	2855	3071	3139	Espagne
Sweden	4834	3164	582	362	3764	2596	3133	Suède
Switzerland	1870	1603	295	231	1652	1577	1581	Suisse
Turkey	3631	3030	82	51	3297	3387	2405	Turquie
United Kingdom	7229	9094	128	156	8789	8355	10138	Royaume-Uni
former Yugoslavia	2394	282	107	12	163	360	324	ancienne Yougoslavie
EUROPE	78357	72497	147	127	71654	69235	76601	EUROPE
former USSR *	79420	28207	299	96	39175	27902	17543	ancienne URSS *
Canada a/	13449	16572	559	574	16917	16351	16447	Canada a/
United States a/	79141	108259	348	420	106442	107858	110478	Etats-Unis a/
NORTH AMERICA	92590	124831	368	435	123359	124209	126925	AMERIQUE DU NORD
Japan	33118	32127 *	284	258 *	32129	32126	...	Japon

a/ Home produced sleepers included.

a/ Y compris la production domestique de traverses.

ANNEX

Table 2

SAWN HARDWOOD - SCAGES FEUILLUS

APPARENT CONSUMPTION - CONSOMMATION APPARENTE

Country	Total (1000 m3)		Per capita (m3/1000 capita)		Total (1000 m3)			Pays
	1979-81 (average)	1992-94	1979-81 (moyenne)	1992-94	1992	1993	1994	
Albania *	95	295 *	36	88 *	296	295	...	Albanie *
Austria	391	272	52	34	277	259	279	Autriche
Belgium-Luxembourg	675	1094 *	66	105 *	1012	1135	...	Belgique-Luxembourg
Bulgaria	450	57 *	51	7 *	66	53	...	Bulgarie
Cyprus	15	23	24	32	26	19	24	Chypre
former Czechoslovakia	702	356	46	23	210	409	448	ancienne Tchécoslovaquie
Denmark *	386	258	75	50	268	258	247	Danemark *
Finland	67	86	14	17	78	87	94	Finlande
France	3805	2991	71	52	3186	2842	2946	France
Germany	...	1722	...	21	2161	1498	1508	Allemagne
former G.D.R. *	469	...	28	...	...	...	...	ancienne R.D.A. *
Germany, Fed. Rep. of	2468	...	40	...	...	...	...	Allemagne, Rép. Féd. d'
Greece	287	148 *	30	14 *	174	135	...	Grèce
Hungary	732	292	68	28	321	265	290	Hongrie
Iceland	2	4 *	9	15 *	4	4	...	Islande
Ireland	77	75	23	21	50	72	102	Irlande
Israel	19	24 *	5	5 *	38	17	...	Israël
Italy	2558	2620	45	46	2705	2486	2669	Italie
Malta	8	6	25	18	10	4	5	Malte
Netherlands	785	788	55	52	810	811	743	Pays-Bas
Norway	60	53	15	12	46	51	62	Norvège
Poland	1010	578	28	15	518	559	656	Pologne
Portugal	176	326 *	18	33 *	351	314	...	Portugal
Romania	2083	1551 *	94	68 *	1500	1577	...	Roumanie
Spain	1126	1239	30	32	1509	1133	1074	Espagne
Sweden	252	256	30	29	251	249	267	Suède
Switzerland	188	131	30	19	120	133	140	Suisse
Turkey	963	1784	22	30	1564	2080	1707	Turquie
United Kingdom	1309	712	23	12	789	666	681	Royaume-Uni
former Yugoslavia	1141	245	51	11	111	350	274	ancienne Yougoslavie
EUROPE	22299	17881	42	31	18134	17762	17747	EUROPE
former USSR *	12347	8547	46	29	10566	8768	6308	ancienne URSS *
Canada	1735	1088	72	38	1011	1201	1052	Canada
United States	16675	18766	73	73	24872	16052	15375	Etats-Unis
NORTH AMERICA	18410	19854	73	69	25883	17253	16427	AMERIQUE DU NORD
Japan	7992	4705 *	68	38 *	4649	4733	...	Japon

ANNEX

Table 3

PARTICLE BOARD - PANNEAUX DE PARTICULES a/

Country	APPARENT CONSUMPTION - CONSOMMATION APPARENTE							Pays
	Total (1000 m3)		Per capita (m3/1000 capita)		Total (1000 m3)			
	1979-81 (average)	1992-94	1979-81 (moyenne)	1992-94	1992	1993	1994	
Austria	598.5	881.7	79.2	110.3	876.0	848.0	921.0	Autriche
Belgium-Luxembourg	632.2	1024.7 *	61.9	98.2 *	766.0	1154.0	...	Belgique-Luxembourg
Bulgaria	300.2	125.7 *	33.9	14.8 *	129.0	124.0	...	Bulgarie
Cyprus	7.6	39.7	12.2	55.1	31.0	47.0	41.0	Chypre
former Czechoslovakia	664.9	476.3	43.5	30.4	530.0	424.0	475.0	ancienne Tchécoslovaquie
Denmark	460.8	420.0	90.0	81.0	438.0	406.0	416.0	Danemark
Finland	429.6	270.3	89.9	53.4	265.0	257.0	289.0	Finlande
France	2254.0	2482.0	41.8	43.0	2641.4	2475.8	2328.9	France
Germany	...	8652.3	...	106.7	8279.8	8667.0	9010.0	Allemagne
former G.D.R. *	928.8	...	55.5	...	...	...	...	ancienne R.D.A. *
Germany, Fed. Rep. of	6355.7	...	103.3	...	...	...	...	Allemagne, Rép. Féd. d'
Greece	288.7	286.7 *	30.1	27.7 *	296.0	282.0	...	Grèce
Hungary	308.3	287.5	28.8	27.9	300.0	250.5	312.1	Hongrie
Iceland	21.0	17.3 *	91.3	65.8 *	18.0	17.0	...	Islande
Ireland	124.7	100.7	36.6	28.3	127.0	85.0	90.0	Irlande
Israel	54.2	93.7 *	14.0	17.8 *	87.0	97.0	...	Israël
Italy	1893.3	2528.3	33.6	44.3	2652.0	2506.0	2427.0	Italie
Malta	-	8.0	-	22.2	13.0	5.0	6.0	Malte
Netherlands	537.2	637.7	38.0	41.7	689.0	560.0	664.0	Pays-Bas
Norway	396.2	225.0	97.0	53.0	297.7	144.0	233.3	Norvège
Poland	1216.8	1118.7	34.2	29.1	993.0	1079.0	1284.0	Pologne
Portugal	265.7	334.7 *	27.2	33.9 *	334.0	335.0	...	Portugal
Romania	723.5	428.0 *	32.6	18.8 *	428.0	428.0	...	Roumanie
Spain	1079.7	1818.1	28.8	46.5	1918.9	1680.3	1855.1	Espagne
Sweden	701.0	626.7	84.4	71.6	598.0	627.0	655.0	Suède
Switzerland	470.3	435.3	74.2	62.8	435.0	428.0	443.0	Suisse
Turkey	363.3	842.3	8.2	14.1	947.0	924.0	656.0	Turquie
United Kingdom	1940.3	2812.0	34.5	48.3	2829.0	2827.0	2780.0	Royaume-Uni
former Yugoslavia	800.2	247.3	35.9	10.8	214.0	266.0	262.0	ancienne Yougoslavie
EUROPE	23816.9	27220.6	44.7	47.8	27132.8	26943.6	27585.4	EUROPE
former USSR *	4747.2	4105.0	17.9	14.0	5264.0	4101.3	2949.6	ancienne URSS *
Canada	880.7	1529.2	36.6	53.0	1667.0	1399.9	1520.6	Canada
United States	6089.4	16588.0	26.7	64.3	15160.0	16706.0	17898.0	Etats-Unis
NORTH AMERICA	6970.1	18117.2	27.7	63.1	16827.0	18105.9	19418.6	AMERIQUE DU NORD
Japan	1275.6	1396.0 *	10.9	11.2 *	1288.0	1450.0	...	Japon

a/ Including non-wood particle board.

a/ Y compris les panneaux de particules non-dérivés du bois.

ANNEX

Table 4

PLYWOOD - CONTREPLAQUES

Country	APPARENT CONSUMPTION - CONSOMMATION APPARENTE							Pays
	Total (1000 m3)		Per capita (m3/1000 capita)		Total (1000 m3)			
	1979-81 (average)	1992-94	1979-81 (moyenne)	1992-94	1992	1993	1994	
Albania *	7.0	6.0 *	2.6	1.8 *	6.0	6.0	...	Albanie *
Austria	18.8	101.3	2.5	12.7	110.0	98.0	96.0	Autriche
Belgium-Luxembourg	159.0	356.7 *	15.6	34.2 *	236.0	417.0	...	Belgique-Luxembourg
Bulgaria	53.0	2.0 *	6.0	0.2 *	...	4.0	...	Bulgarie
Cyprus	11.2	7.9	17.8	11.0	8.0	5.8	10.0	Chypre
former Czechoslovakia	270.5	50.7	17.7	3.2	75.0	25.0	52.0	ancienne Tchécoslovaquie
Denmark	134.2	134.7	26.2	26.0	167.0	142.0	95.0	Danemark
Finland	103.7	112.0	21.7	22.1	131.0	114.0	91.0	Finlande
France	666.5	589.1	12.4	10.2	679.4	549.4	538.5	France
Germany	...	1203.0	...	14.8	1186.1	1171.0	1252.0	Allemagne
former G.D.R. *	93.1	...	5.6	...	...	...	...	ancienne R.D.A. *
Germany, Fed. Rep. of	845.3	...	13.7	...	...	...	...	Allemagne, Rép. Féd. d'
Greece	52.9	62.3 *	5.5	6.0 *	59.0	64.0	...	Grèce
Hungary	38.8	13.6	3.6	1.3	20.0	13.4	7.4	Hongrie
Iceland	4.8	4.1 *	21.0	15.4 *	4.2	4.0	...	Islande
Ireland	39.0	55.5	11.5	15.6	49.0	46.1	71.4	Irlande
Israel	46.0	96.3 *	11.9	18.3 *	83.0	103.0	...	Israël
Italy	445.0	560.3	7.9	9.8	553.0	552.0	576.0	Italie
Malta	5.9	6.0	18.0	16.7	6.0	4.0	8.0	Malte
Netherlands	495.6	510.1	35.1	33.4	529.4	528.0	473.0	Pays-Bas
Norway	73.2	64.0	17.9	15.1	59.1	59.5	73.5	Norvège
Poland	219.6	98.0	6.2	2.5	84.0	100.0	110.0	Pologne
Portugal	13.1	24.9 *	1.3	2.5 *	20.7	27.0	...	Portugal
Romania	162.5	35.3 *	7.3	1.6 *	10.0	48.0	...	Roumanie
Spain	98.2	156.3	2.6	4.0	124.2	166.5	178.2	Espagne
Sweden	162.7	144.0	19.6	16.5	137.0	133.0	162.0	Suède
Switzerland	90.8	124.2	14.3	17.9	111.0	117.4	144.2	Suisse
Turkey	37.7	126.7	0.8	2.1	101.0	147.0	132.0	Turquie
United Kingdom	957.8	1237.3	17.0	21.3	1379.0	1149.0	1184.0	Royaume-Uni
former Yugoslavia	136.3	155.7	6.1	6.8	71.0	199.0	197.0	ancienne Yougoslavie
EUROPE	5442.3	6038.1	10.2	10.6	5997.1	5993.1	6124.2	EUROPE
former USSR *	1743.9	887.1	6.6	3.0	1402.6	826.4	432.4	ancienne URSS *
Canada	1989.9	1690.0	82.8	58.5	1668.0	1696.0	1706.0	Canada
United States	17111.7	17334.0	75.2	67.2	17140.0	17161.0	17701.0	Etats-Unis
NORTH AMERICA	19101.6	19024.0	75.9	66.3	18808.0	18857.0	19407.0	AMERIQUE DU NORD
Japan	7839.2	9197.0 *	67.1	73.8 *	8915.0	9338.0	...	Japon

ANNEX

Table 5

FIBREBOARD - PANNEAUX DE FIBRES

APPARENT CONSUMPTION - CONSOMMATION APPARENTE

Country	Total (1000 m3)		Per capita (m3/1000 capita)		Total (1000 m3)			Pays
	1979-81 (average)	1992-94	1979-81 (moyenne)	1992-94	1992	1993	1994	
Austria	55.1	83.7	7.3	10.5	67.0	92.0	92.0	Autriche
Belgium-Luxembourg	56.7	132.0 *	5.6	12.7 *	160.0	118.0	...	Belgique-Luxembourg
Bulgaria	75.4	45.7 *	8.5	5.4 *	29.0	54.0	...	Bulgarie
Cyprus	1.1	30.8	1.8	42.8	31.0	29.0	32.4	Chypre
former Czechoslovakia	213.1	96.7	13.9	6.2	67.0	104.0	119.0	ancienne Tchécoslovaquie
Denmark *	58.9	82.4	11.5	15.9	76.0	69.3	102.0	Danemark *
Finland	152.5	94.3	31.9	18.6	101.0	93.0	89.0	Finlande
France	240.6	283.2	4.5	4.9	247.0	285.1	317.5	France
Germany	...	817.4	...	10.1	717.3	802.0	933.0	Allemagne
former G.D.R. *	359.7	...	21.5	...	...	...	...	ancienne R.D.A. *
Germany, Fed. Rep. of	494.2	...	8.0	...	...	...	...	Allemagne, Rép. Féd. d'
Greece	24.6	117.0 *	2.6	11.3 *	143.0	104.0	...	Grèce
Hungary	101.6	33.8	9.5	3.3	39.0	43.4	19.1	Hongrie
Iceland	2.2	4.0 *	9.4	15.2 *	4.0	4.0	..	Islande
Ireland	26.4	76.6	7.8	21.5	41.0	84.2	104.5	Irlande
Israel	10.0	102.0 *	2.6	19.4 *	108.0	99.0	..	Israël
Italy	277.9	118.3	4.9	2.1	261.0	85.0	9.0	Italie
Malta	-	12.0	-	33.3	12.0	12.0	12.0	Malte
Netherlands	142.4	211.7	10.1	13.8	217.0	199.0	219.0	Pays-Bas
Norway	153.6	181.8	37.6	42.8	157.5	188.3	199.6	Norvège
Poland	601.6	369.3	16.9	9.6	377.0	337.0	394.0	Pologne
Portugal	51.0	94.5 *	5.2	9.6 *	83.8	99.8	...	Portugal
Romania	248.3	232.3 *	11.2	10.2 *	227.0	235.0	...	Roumanie
Spain	181.9	337.7	4.9	8.6	321.0	289.8	402.2	Espagne
Sweden	318.5	169.0	38.3	19.3	175.0	148.0	184.0	Suède
Switzerland	72.8	142.9	11.5	20.6	126.3	139.9	162.4	Suisse
Turkey	69.7	109.7	1.6	1.8	120.0	110.0	99.0	Turquie
United Kingdom	397.2	575.0	7.1	9.9	504.5	607.4	613.0	Royaume-Uni
former Yugoslavia	54.3	18.3	2.4	0.8	...	21.0	39.0	ancienne Yougoslavie
EUROPE	4441.4	4572.0	8.3	8.0	4407.4	4453.2	4855.5	EUROPE
former USSR *	2714.6	1113.6	10.2	3.8	1613.9	1025.9	701.1	ancienne URSS *
Canada	779.3	624.6	32.4	21.6	545.0	683.4	645.3	Canada
United States	6045.6	5116.3	26.6	19.8	4953.0	4969.0	5427.0	Etats-Unis
NORTH AMERICA	6824.9	5740.9	27.1	20.0	5498.0	5652.4	6072.3	AMERIQUE DU NORD
Japan	614.7	1239.0 *	5.3	9.9 *	1055.0	1331.0	...	Japon

ANNEX

Table 6

HARDBOARD - PANNEAUX DURS

Country	APPARENT CONSUMPTION - CONSOMMATION APPARENTE							Pays
	Total (1000 m3)		Per capita (m3/1000 capita)		Total (1000 m3)			
	1979-81 (average)	1992-94	1979-81 (moyenne)	1992-94	1992	1993	1994	
Austria	41.1	67.7	5.4	8.5	53.0	75.0	75.0	Autriche
Belgium-Luxembourg	50.0	104.0 *	4.9	10.0 *	128.0	92.0	...	Belgique-Luxembourg
Bulgaria	75.4	45.0 *	8.5	5.3 *	29.0	53.0	...	Bulgarie
Cyprus	1.0	28.3	1.5	39.4	28.0	27.0	30.0	Chypre
former Czechoslovakia	148.0	98.0	9.7	6.3	67.0	106.0	121.0	ancienne Tchécoslovaquie
Denmark	38.2	77.3	7.5	14.9	69.0	63.0	100.0	Danemark
Finland	56.5	40.7	11.8	8.0	41.0	37.0	44.0	Finlande
France	159.3	265.5	3.0	4.6	244.0	238.1	314.5	France
Germany	...	689.1	...	8.5	603.3	684.0	780.0	Allemagne
former G.D.R. *	359.7	...	21.5	...	...	...	...	ancienne R.D.A. *
Germany, Fed. Rep. of	336.9	...	5.5	...	...	...	...	Allemagne, Rép. Féd. d'
Greece	18.1	112.3 *	1.9	10.8 *	131.0	103.0	...	Grèce
Hungary	101.6	34.2	9.5	3.3	40.0	43.4	19.1	Hongrie
Iceland	1.2	2.3 *	5.4	8.9 *	3.0	2.0	...	Islande
Ireland	22.1	59.7	6.5	16.8	30.0	64.0	85.0	Irlande
Israel	-	82.7 *	-	15.7 *	88.0	80.0	...	Israël
Italy	216.2	104.7	3.8	1.8	230.0	62.0	22.0	Italie
Malta	-	5.3	-	14.8	9.0	4.0	3.0	Malte
Netherlands	97.8	141.0	6.9	9.2	156.0	122.0	145.0	Pays-Bas
Norway	84.4	39.9	20.7	9.4	39.6	37.4	42.8	Norvège
Poland	353.0	236.7	9.9	6.2	209.0	227.0	274.0	Pologne
Portugal	50.9	92.7 *	5.2	9.4 *	82.0	98.0	...	Portugal
Romania	144.7	86.3 *	6.5	3.8 *	77.0	91.0	...	Roumanie
Spain	227.3	344.5	6.1	8.8	332.0	293.4	408.0	Espagne
Sweden	206.4	117.7	24.9	13.4	116.0	117.0	120.0	Suède
Switzerland	43.4	116.6	6.8	16.8	112.4	98.5	138.8	Suisse
Turkey	69.7	109.0	1.6	1.8	119.0	109.0	99.0	Turquie
United Kingdom	234.6	501.3	4.2	8.6	424.5	503.4	576.0	Royaume-Uni
former Yugoslavia	54.3	14.3	2.4	0.6	...	14.0	35.0	ancienne Yougoslavie
EUROPE	3191.8	3616.7	6.0	6.4	3454.8	3444.2	3951.2	EUROPE
former USSR *	1293.6	947.8	4.9	3.2	1302.4	915.8	625.1	ancienne URSS *
Canada	215.3	249.6	9.0	8.6	192.0	307.4	249.3	Canada
United States	2937.5	3461.0	12.9	13.4	3226.0	3383.0	3774.0	Etats-Unis
NORTH AMERICA	3152.8	3710.6	12.5	12.9	3418.0	3690.4	4023.3	AMERIQUE DU NORD
Japan	285.9	679.0 *	2.4	5.4 *	529.0	754.0	...	Japon

ANNEX

Table 7

Former USSR/Russian Federation base prices for unsorted coniferous sawnwood to the United Kingdom, 1986 to 1995 (£/m³, c.i.f.)

		Redwood (pine)	Whitewood (spruce)
1986	January	158	102
	May	180	119
1987	January	178	118
	May	180	119
1988	January	177	117
	May	177	117
1989	January	180	120
	May	183	126
1990	January	203	167
	May	204	168
1991	March	188	136
	May	191	136
1992	March	187	125
	May	198	127
1993	March	194	113
	May	194	113
1994	March	122	71
	May	205	153
1995	March	201	148
	May	195	130
% change			
May 1994 to May 1995		-4.9	-15.0

Source: *Softwood Market Report*, Churchill & Sim Ltd, 1995

ANNEX

Table 8
Swedish coniferous sawnwood export prices, 1987 to 1995
(Swedish krona/m³, f.a.s.)

		Redwood (pine)		Whitewood (spruce)	
		Unsorted	Fifths	Unsorted	Fifths
1987		1,715	1,245	1,300	1,070
1988		1,830	1,335	1,365	1,115
1989		1,895	1,507	1,390	1,140
1990		2,027	1,747	1,710	1,470
1991	January	2,001	1,732	1,683	1,380
	February	1,988	1,623	1,640	1,220
	July	1,900	1,580	1,590	1,130
	October	1,950	1,495	1,610	1,120
1992	January	1,946	1,425	1,565	1,080
	April	1,948	1,388	1,589	1,073
	July	1,987	1,353	1,549	1,087
	October	1,967	1,287	1,518	1,056
1993	January	1,991	1,345	1,439	1,060
	April	2,054	1,404	1,468	1,180
	July	2,089	1,440	1,557	1,242
	October	2,095	1,480	1,598	1,359
1994	January	2,147	1,557	1,667	1,433
	April	2207	1653	1885	1661
	July	2267	1831	1941	1795
	October	2316	1902	2007	1795
1995	January	2357	1959	2046	1737
% change from January 1994 to January 1995		9.8	25.8	22.7	21.2

Source: Allman manadsstatistik (Monthly digest of Swedish Statistics), 1995:5, Sveriges officiella statistik, Statistiska centralbyran 1995 (Official Statistics of Sweden, Statistics Sweden 1995).

SOME FACTS ABOUT THE TIMBER COMMITTEE

The Timber Committee is a principal subsidiary body of the ECE (UN Economic Commission for Europe) based in Geneva. It constitutes a forum for cooperation and consultation between member countries on forestry, forest industry and forest product matters. All countries of Europe; the former USSR; United States of America, Canada and Israel are members of the ECE and participate in its work.

The ECE Timber Committee shall, within the context of sustainable development, provide member countries with the information and services needed for policy- and decision-making regarding their forest and forest industry sector ("the sector"), including the trade and use of forest products and, when appropriate, formulate recommendations addressed to member Governments and interested organizations. To this end, it shall:

1. With the active participation of member countries, undertake short-, medium- and long-term analyses of developments in, and having an impact on, the sector, including those offering possibilities for the facilitation of international trade and for enhancing the protection of the environment;

2. In support of these analyses, collect, store and disseminate statistics relating to the sector, and carry out activities to improve their quality and comparability;

3. Provide the framework for cooperation e.g. by organizing seminars, workshops and *ad hoc* meetings and setting up time-limited *ad hoc* groups, for the exchange of economic, environmental and technical information between governments and other institutions of member countries that is needed for the development and implementation of policies leading to the sustainable development of the sector and to the protection of the environment in their respective countries;

4. Carry out tasks identified by the UN-ECE or the Timber Committee as being of priority, including the facilitation of subregional cooperation and activities in support of the economies in transition of central and eastern Europe and of the countries of the region that are developing from an economic point of view;

5. It should also keep under review its structure and priorities and cooperate with other international and intergovernmental organizations active in the sector, and in particular with the FAO (Food and Agriculture Organisation) and its European Forestry Commission and with the ILO (International Labour Organisation), in order to ensure complimentarily and to avoid duplication, thereby optimizing the use of resources.

More information about the Committee's work may be obtained by writing to:

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UN-ECE Trade Division
Palais des Nations
CH-1211 Geneva 10, Switzerland
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Printed at United Nations, Geneva
GE.95-23204–August 1995–2,025

United Nations publication
ISSN 0259-4323